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On the Accuracy of Businessmen's Expectations*

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THE POSTWAR YEARS have witnessed growing emphasis on the importance of expectations in influencing business activity. Newspapers and periodical literature of the day are replete with statements that there is little danger of recession so long as people maintain confidence in the future. Despite all this discussion, few attempts have yet been made to ascertain from empirical data the accuracy and influence of expectations. The main reason for this has been, no doubt, the scarcity of available data.

There is, however, one such body of data reflecting the anticipations of a major sector of the economy over a long and varied period of time. This is the railroad shippers' forecasts, probably the only continuous set of data on economic expectations in existence extending back quarterly to the 1920's and relating to individual industries and regions. It is the purpose of this article to summarize the results obtained with regard to the accuracy of these

forecasts from a broad study of these data¹ and at the same time to extend this part of the analysis beyond the terminal date of the earlier study, 1950.

The Data

The firms that account for the great bulk of railway shipments are members of the National Association of Shippers Advisory Boards, an affiliate of the Association of American Railroads. Besides consulting with the AAR on handling methods and transportation problems, the members of this organization are asked to predict their freight car requirements one quarter in advance, for the purpose of aiding the railroads in allocating freight cars. These forecasts, in terms of physical units — carloadings — are made about the middle of the quarter preceding the quarter to which they refer. The forecasts are submitted by the shippers to the appropriate regional board — the nation is divided into thirteen areas, each with a regional board — where they are compiled into 32 principal commodity groups as well as into whatever subgroups may be of special importance in the particular region. The totals for the principal commodity groups are forwarded to the Car Service Division of the AAR in Washing-

* This study was part of an over-all project on the relationship between businessmen's expectations and business fluctuations conducted under the joint sponsorship of the Merrill Foundation for the Advancement of Financial Knowledge and the University of Illinois. The project was under the general direction of Franco Modigliani, who contributed substantially to the present study. The author would also like to express his appreciation to Jack J. Feldman for methodological contributions and to Ramona Jean Robbins and Mary Lou Walling for their capable assistance with the statistical analysis.

¹ Robert Ferber, *The Railroad Shippers' Forecasts*, a monograph, a Study in Business Expectations and Planning, Bureau of Economic and Business Research, University of Illinois, 1953.

ton, D. C., where they are combined and issued in a national release by the AAR in the first half of the first month in the quarter. This release, presenting the forecasts for the nation as a whole as well as for individual commodity groups and for regions within commodity groups, has been issued since 1927. The definitions of the commodity groups and regions have remained remarkably stable over the years, refreshingly so to anyone doing much work with economic time series.

So far as could be ascertained from discussions with the shippers and from a survey made among them, the data appear to be representative of the shipments expectations of the members of this Association. Response rates in any one region-commodity group seem to vary anywhere from 25 percent to 80 percent, but since special effort is made to secure replies from the large shippers, the response in terms of shipments represented is considerably larger, often tantamount to a complete census.

In addition, no evidence of bias was uncovered in studying the representativeness of the data: there was no indication of misrepresentation of the forecasts for fear of information falling into competitors' hands or to ensure an adequate supply of freight cars on hand. A question does arise regarding the degree to which these forecasts represent the official views of the firm since the traffic managers, being operating officials, may not always be acquainted with the views of the people at the policy level. To what extent this consideration limits the generality of results obtained from these data is as yet an unanswered question.

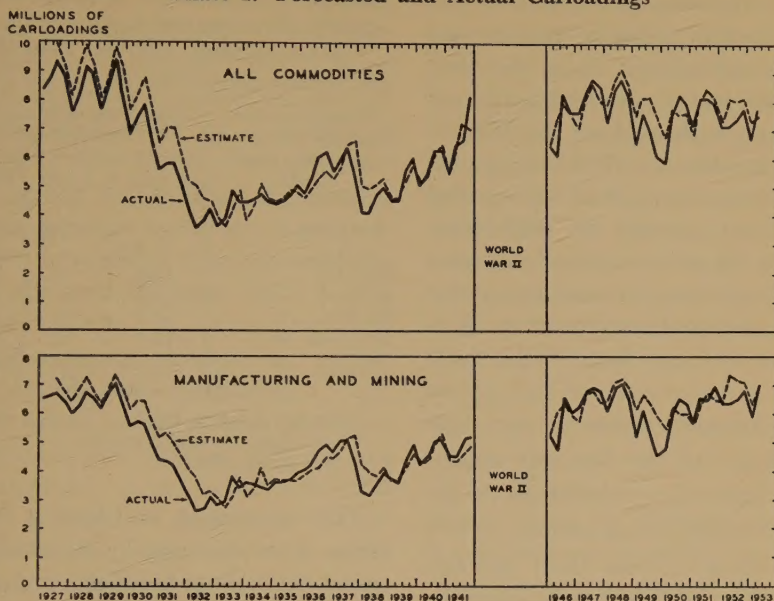
The Absolute Accuracy of the Forecasts

An over-all view of the accuracy of the forecasts is provided by Chart 1. This chart portrays the course of expected and actual carloadings for all 32 commodity groups and for so-called manufactured commodities only for the period 1927-53 excluding the World War II years. By "manufactured commodities" is meant all commodities less agricultural commodities and coal and ore shipments.² Coal and ore are excluded partly because of the many erratic forces that have influenced shipments of these commodities during this period—labor difficulties in the case of coal, and climatic factors (principally the date of opening of the Great Lakes shipping season) in the case of ore—and partly because of the disproportionately great weight these commodities have in total carloadings relative to their general economic importance.

In the broad swings of business activity, Chart 1 indicates that the forecasts have been similar to actual carloadings. This is not too surprising in

² Actually, the remaining commodities are not all manufactured goods, the term being used mainly in a general descriptive sense. The commodity groups included in "manufactured commodities" are: flour, meal, and other mill products; salt; lumber and forest products; petroleum and petroleum products; sugar, syrup, and molasses; iron and steel; other metals; machinery and boilers; cement; brick and clay products; lime and plaster; agriculture implements and vehicles other than autos; automobiles and trucks; vehicle parts; fertilizers, all kinds; paper, paper board, and prepared roofing; chemicals and explosives; food products in cans and packages; frozen foods, fruits and vegetables.

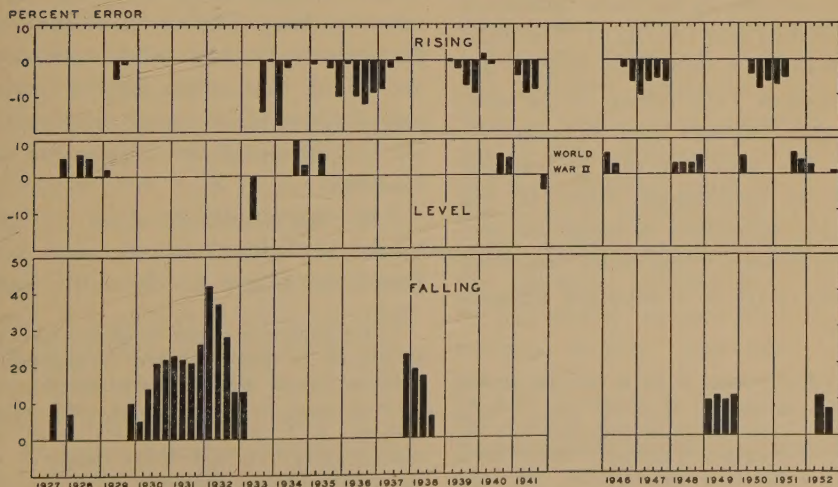
Chart 1. Forecasted and Actual Carloadings



view of the fact that broad business indicators such as carloadings do not move rapidly—the levels of both the forecast and actual carloadings for a

particular quarter are influenced substantially by the level of carloadings in the most recent period after allowance for seasonal variations. With respect to

Chart 2. Percent Error in Shippers' Forecasts by Trend of Carloadings, Quarterly, 1927-52



quarterly fluctuations, however, the forecasts appear to lag behind changes in actual carloadings. Thus, the forecasts consistently overestimated actual shipments throughout the 1929-32 decline, overshot the 1932 low, tended to underestimate much of the ensuing recovery, and overshot the 1937-38 recession. In the postwar period, the forecasts did anticipate to some extent the 1948 dip, but underestimated its magnitude as well as that of the later recovery.

A more graphic picture of the absolute accuracy of the forecasts is provided by Chart 2, which eliminates the strong seasonality in carloadings so evident in Chart 1. This chart portrays the errors in the forecasts by quarters, i.e., the percentage deviation of the ratio of the forecasts to actual carloadings from unity for each quarter.³ These error percentages are segregated according to the immediate trend of carloadings. Three trends are distinguished, rising, level, and falling, based on the ratio of carloadings in the current quarter to those in the same quarter of the preceding year (A_t/A_{t-4}). The trend of carloadings is said to be rising if this ratio exceeds 1.05, falling if the ratio is less than .95, and level otherwise. By basing this ratio on the year-to-year change in carloadings, more or less automatic allowance is made for seasonal variations, a procedure preferable in many ways to computing seasonal indexes.

Table 1. Average Errors in Shippers' Forecasts by Direction and Amount of Change in Carloadings, 1927-41, 1946-53^a

Change in carloadings relative to previous year A_t/A_{t-4}	Direction of change in carloadings		
	Rising	Level	Falling
0- 4.9%.....	x	3.2%	x
5- 9.9.....	-1.2%	x	8.7% ^b
10-14.9.....	-2.6	x	17.0 ^b
15-19.9.....	-5.1	x	11.0
20-24.9.....	-7.7	x	19.6
25% and over....	-12.1	x	24.7
Total.....	-5.2	3.2	17.5

^a Second quarter, 1953.

^b Less than five observations.

x Not applicable.

The segregation in Chart 2 of the errors in the forecasts by the change in actual carloadings highlights one of the most striking features of the forecasts—the tendency of the direction of error to be inversely related to the direction of movement of carloadings. In every quarter where carloadings declined relative to their level a year earlier, the forecasts were too high; and in almost every quarter characterized by rising carloadings, the forecasts were too low.⁴ The errors of the forecasts tend to be larger when carloadings are falling than when they are rising, and the size of the error is related to the amplitude of the change in carloadings.

The magnitudes involved are presented in Table 1 for the same years shown in Chart 2. Over the entire

³ In other words, if E_t is defined as the expected carloadings in quarter t , and A_t the actual carloadings in that quarter, the measure of accuracy depicted in this chart is $(E_t/A_t) - 1$.

⁴ Technical note: The tendency for overestimation in quarters when carloadings remain level may well be a peculiarity of the statistic used, as the expected value of the statistic, E/A , in a probability sense, will exceed unity if E and A are randomly and independently distributed.

period studied, the average error in quarters when carloadings were falling, 17.5 percent, is seen to have exceeded the average error in quarters when carloadings were rising by a margin of more than three to one. This phenomenon cannot be ascribed to possibly greater amounts of change in carloadings on downswings than on upswings, as is also evident from Table 1. For similar changes in carloadings, the average error on downswings consistently exceeds that on upswings.

The larger margin of error on downswings therefore appears to be a real phenomenon. If so, what does this mean? Clearly, the shippers in the aggregate were caught unawares more seriously by a decline in carloadings than by a rise. It could be argued that this phenomenon is largely a by-product of the Great Depression, that the magnitude of the slump was completely unexpected at the time, and that for later years this phenomenon would not appear. Such an assertion would not be substantiated by the facts available, however, for errors of much the same size in relation to the magnitude of the downswing appear in both the 1937-38 and the 1949 recessions.

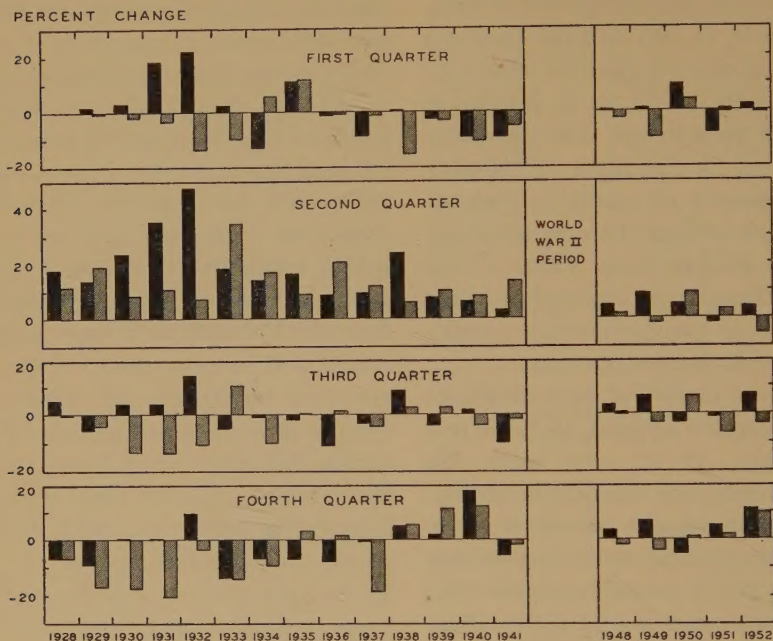
Evidently, the forecasts in the aggregate represent an optimistic view of the business outlook. Such a view is not inconsistent with American business activity, which historically has been rising steadily and, as the businessman well knows, is expected to keep on rising. This expectation of a gradually rising level of business activity may well be reflected, consciously or otherwise, in the shippers' quarterly forecasts, i.e., they may be superimposing their ex-

pected short-run shipments on a trend line with an unwarrantedly high slope, and this would account for the larger errors in the forecasts on downswings.

Although these results are based on the carloading forecasts for total manufactured products, they remain equally valid when the analysis is extended to individual industries and to regions within industries. As for the total, upward movements are underestimated, downward movements are overestimated, and for every industry, the average error on downswings substantially exceeds that on upswings. In addition, sizable differences in accuracy are apparent among the individual industries. Nondurable-goods industries such as paper, canned goods, and flour tend to be the most accurate, whereas durable-goods industries such as automobiles, brick and clay, iron and steel, and machinery are the least accurate. This is not surprising in view of the previously detected relationship of errors in the forecasts with the magnitude of change in carloadings, for it is the fluctuations of carloadings of nondurable-goods industries that exhibit the least amplitude.

Regional differences in accuracy are also apparent, though they are not as large as in the case of industries. Analysis of these differences revealed that two main factors account for them: the differences in the importance of various industries between regions, and distinctive influences brought about, perhaps, by differential regional fluctuations in business activity. The latter is not unknown, of course, and its influence was tested in the same manner as industry differences in accuracy—through comparing variations in the

Chart 3. Actual and Anticipated Change in Carloadings by Quarters, 1928-52



amplitude of the fluctuations of industry carloadings from one region to another with differences in the average error of the forecasts. Some relationship, though not a pronounced one, was detected between these two variables. Other factors are therefore probably involved as well.

Another means of evaluating the accuracy of the forecasts lies in determining their success in gauging the direction and amount of change in carloadings rather than the actual level. This method provides a more exacting measure of accuracy in that the use of rates of change serves largely to remove that part of the correspondence between the forecasts and actual carloadings which is due to their relationship to recent levels of carloadings. Because of this relationship, it would be theoretic-

cally possible for the forecasts to miss completely the actual change in carloadings and yet be reasonably close to the true figure (especially with a quarterly time unit).

Farfetched as such a statement may sound, Chart 3 indicates that in practice it is very close to the truth. This chart compares the anticipated and actual changes in the carloadings of total manufactured products from one quarter to the next, segregated by quarters.⁵ It brings out rather strikingly a tendency for the forecasted changes to run counter to, rather than with, actual changes. Particularly during the Great Depression, through the 1937-38 recession, and then again in the post-

⁵ Separation by quarters is necessary in order to isolate the comparison from seasonal fluctuations.

war years, 1947-51, when the forecasts predicted an increase, carloadings were more likely to decline than to rise; and when a decline was predicted, carloadings were more likely to rise than to fall.⁶

In the aggregate, therefore, the forecasts clearly failed to anticipate the direction of movement of carloadings. For individual industries and for industries within regions, however, the forecasts fared somewhat better. The correlation between the anticipated and the actual change in shipments appears to be positive for selected entities in certain quarters. Hence, on this lower level of aggregation the forecasts, used on a selective basis, seem to provide additional information regarding short-run trends, although even on such a basis the degree of association with actual changes is not too close.

The Forecasts in Relation to "Naïve" Methods

So far we have been examining the accuracy of the forecasts in an absolute sense in that no attempt has been made to relate the discussion to alternative means of forecasting carloadings. Although it is clearly important to know the magnitudes of the errors in the shippers' forecasts, from a practical point of view it is even more important to know how the accuracy of these forecasts compares with that of forecasts obtained by alternative, easily-available methods. For if the shippers' forecasts

are not more accurate than those which could be obtained by a simple alternative method, they are not likely to be of much value from a forecasting point of view. These two concepts of accuracy are clearly not the same, for a set of forecasts may measure up poorly in this latter, relative respect, and yet be highly accurate in an absolute sense; and vice versa.

In assessing the accuracy of the shippers' forecasts in this relative sense, what alternative method, or yardstick, should be used? Some simple, easily-applied formula that removes the problem of judgment seems to be a logical answer, and perhaps the best suited of these are so-called "naïve model" formulas which postulate the future to have some simple relation to the past. Two such formulas were used in this test. The first, which we denote by E_t^* , consisted of nothing more than the extrapolation of the most recent level of carloadings. However, because of the seasonal problem and the desire to avoid arbitrary seasonal adjustments, this level was taken as that of the preceding year. In other words, the forecast for quarter t , E_t^* , is taken to be the level of carloadings in the corresponding quarter of the preceding year.

The second of the naïve models sought to adjust this level by the change occurring during the intervening year. In other words, the forecast by this second method, which we shall denote by E_t^{**} , is⁷

⁶ Technical note: The coefficients of correlation between the two rates of change are negative for all quarters but the fourth, though for no quarter is the correlation significantly different from zero.

⁷ This also could be interpreted as the most recent level of carloadings, A_{t-1} , crudely adjusted for seasonal variation by means of the ratio, A_{t-4}/A_{t-5} .

Table 2. Accuracy of Shippers' Forecasts Relative to Mechanical Projections

Industry	Region	Measure of relative accuracy of E_t			
		1928-41		1946-53 ^a	
		E_t^*	E_t^{**}	E_t^*	E_t^{**}
Iron and steel.	Midwest.	45.8%	0.9%	26.8%	23.1%
	Southwest.	- 3.4	- 5.9	8.4	-53.3
	Atlantic States.	43.0	-16.3	26.2	17.4
	Allegheny.	38.6	-14.9	41.3	36.8
	Pacific Coast.	21.9	-29.9	- 9.5	-35.1
	All ^b	42.5	- 9.0	31.6	22.3
Lumber.	Midwest.	42.4	-17.9	-12.4	-13.2
	Southwest.	11.4	-109.6	13.1	- 8.6
	Atlantic States.	23.7	- 7.2	11.4	- 8.2
	Allegheny.	40.2	-13.5	10.8	-14.5
	Pacific Coast.	23.1	-74.2	20.6	40.1
	All ^b	37.9	-55.1	14.5	4.2
Flour.	Midwest.	2.7	- 1.5	2.0	19.3
	Southwest.	1.1	-19.4	- 3.1	- 2.9
	Atlantic States.	-16.6	-12.4	21.8	- 6.2
	Allegheny.	2.0	20.1	9.3	10.1
	Pacific Coast.	- 1.4	-41.2	- 6.2	10.2
	All ^b	1.5	- 4.8	24.0	14.7
Cement.	Midwest.	8.6	- 5.9	- 5.4	12.7
	Southwest.	18.0	-20.3	6.5	- 1.2
	Atlantic States.	27.7	- 8.0	20.8	29.3
	Allegheny.	7.2	- 2.4	13.7	-15.4
	Pacific Coast.	14.6	-68.1	-20.9	-90.5
	All ^b	28.6	-26.5	11.0	2.4
Agriculture Impls.	Midwest.	59.6	6.2	-30.3	-18.1
	Southwest.	-18.7	-32.5	10.6	- 1.4
	Allegheny.	- 4.0	-80.5	28.9	20.5
	All ^b	50.9	- 3.5	0.0	- 2.4

^a First quarter, 1953.^b Includes all 13 regions, not just those listed.

Carloadings in the corresponding
quarter of the preceding year

×

Carloadings in the preceding quarter

Carloadings in the preceding
quarter of the preceding year.

A comparison of the average accuracy of these mechanical methods relative to that of the shippers' forecasts is shown in Table 2 for the prewar and postwar years separately and by selected

industries and industries within regions. The figures shown in this table were derived as follows: The average absolute error of each set of forecasts was computed. Let us call the average absolute error of the shippers' forecasts, A; the average absolute error of the E_t^* projection, B; and the average absolute error of the E_t^{**} projection, C. Then, a measure of relative accuracy of the shippers' forecasts with regard to E_t^* is $(B-A)/B$; that of the shippers' fore-

casts with regard to E_t^{**} is $(C-A)/C$; and these are the values shown in Table 2.

Clearly, whenever either of these statistics is negative, that particular mechanical projection method is more accurate, on the average, than the shippers' forecasts; and whenever it is positive, the shippers' forecasts method is superior, and the more so the larger is the value of the statistic. With these facts in mind, let us examine Table 2.

In both the prewar and postwar years, the shippers' forecasts are markedly superior to the simple extrapolation of the last year's level of carloadings, E_t^* . However, with respect to E_t^{**} , extrapolating the most recent level roughly adjusted for seasonal variations, the shippers' forecasts prove, if anything, the less accurate of the two. In the prewar period, the mechanical projection method yields more accurate results for each of the five industries studied and for most of the regional classifications as well; on an over-all basis the predictions yielded by this method were 20 percent closer to the actual figures than the shippers' forecasts.

For the postwar years, the superiority of the shippers' forecasts relative to E_t^{**} varies considerably by both industry and region, although on an over-all basis this naïve projection yields closer estimates by much the same amount as in the prewar period. The shippers' forecasts are considerably more accurate for flour and for iron and steel, and less accurate for lumber and for agricultural implements. By and large, the same superiority carries over into individual regions although exceptions

are by no means scarce and the relative superiority of one method over another for any industry varies considerably by region.

Is the gain in the accuracy of the shippers' forecasts relative to the mechanical projection methods in the postwar years symptomatic of a permanent trend or is it merely a temporary phenomenon? To some extent, the latter is undoubtedly true. The early postwar years in particular were characterized by a number of erratic influences which would operate to the detriment of mechanical projections, but which the shippers could have foreseen in preparing their forecasts. Material shortages and labor difficulties are perhaps the two leading examples of such influences. Thus, in several quarters there is evidence that iron and steel shippers and lumber shippers anticipated labor trouble, and although in a few cases there is also evidence that the shippers anticipated some event that didn't occur, on balance such adjustments definitely operated in favor of the shippers' forecasts. Since no means was available of separating the effect of such factors on the forecasts from other, presumably more lasting, influences, it is as yet difficult to judge how permanent may be the improvement in the relative accuracy of the shippers' forecasts. Here again, however, it is clear that from the point of view of providing information regarding future economic trends, the shippers' forecasts are much more useful when used on a selective industry, or even regional, basis than as one over-all aggregate.

Significance of the Results

The findings of this study seem to indicate that businessmen's expectations, so far as they are represented by these data, are largely determined by recent past experience and do not presage future trends with any greater degree of reliability than is obtainable, on the average, by simple mechanical projections. This tendency for expectations to lag behind actual events is particularly evident at cyclical turning points, which are invariably overshot.

The fact that the forecasts are appreciably less accurate when carloadings are falling than when they are rising may well be due to some inherent optimism in the minds of businessmen, perhaps as a result of the historically rising trend of American business activity. In other words, judging by these data businessmen are more likely to be caught unawares on a downswing than on an upswing, which seems to indicate that the former is the main danger from the point of view of maintaining economic stability.

All in all, therefore, this particular set of expectations data does not seem to provide much information on an over-all basis as to future trends in carloadings not obtainable by other methods. The over-all forecasts are more accurate in some quarters than predictions made by simple projections, but to make use of this fact would mean identifying these quarters in advance, a project that carries one back to the starting point when we consider that the relative accuracy of the forecasts depends to a large extent on the movement of carloadings.

The forecasts provide more useful in-

formation regarding future trends on a lower level of aggregation — on industry or regional levels. For some of these entities, there is a clear tendency for the shippers' forecasts to be more accurate than predictions produced by mechanical projection, a tendency that is most evident during periods characterized by interruptions of business operations and changes brought about by events outside of the economy, such as the early post-World War II years. Selective use of the expectations data for such industries may well lead to more accurate forecasts than are otherwise obtainable and possibly, in conjunction with mechanical projections for other industries, to more accurate over-all forecasts.

Further analysis revealed that the reason the shippers' expectations are not more accurate lies in their heavy reliance on recent past experience. This reliance takes the form of *regressing* the current level of activity toward the level of a year ago, which leads to sizable inaccuracies in the forecasts, for regression is not a phenomenon of short-run fluctuations in carloadings. The existence of this regression phenomenon may be indicative of a fundamental rigidity or conservatism on the part of the shippers regarding future movements of carloadings, in that it reflects an expectation of return to past levels of activity — of a decline to counteract a recent rise in activity and of a rise to counteract a recent decline. If this tendency is indeed representative of individual businessmen, and if business plans do lean, in whole or in part, on such expectations, a possible source of economic instability may be revealed.

Corporate Versus Noncorporate Business Borrowers: A Case Study

FRANCES W. QUANTIUS

Assistant Professor of Economics, Ohio State University

THERE EXISTS a general impression that corporations are better credit risks than unincorporated businesses. One of the postwar Federal Reserve Board studies substantiated that this is also the view of most bankers. The Federal Reserve survey¹ dealt comprehensively with the business loans of member banks. Detailed information was provided in a series of articles beginning in March, 1947, in the monthly *Federal Reserve Bulletin*.

In this study the customers of member banks were classified according to the legal form of business in which they were engaged, and figures were presented to show that, in general, unincorporated businesses paid higher interest rates than did corporations of the same size. The Federal Reserve Board found that these differentials prevailed throughout all industry groups and were particularly striking in the fields of retail trade and manufacturing. After comparing the credit terms granted these business borrowers by bankers, the conclusion was reached that corporations are preferred bank customers.

The Federal Reserve study merely noted that corporations are preferred

bank customers, but it did not have as one of its objectives the actual measurement of the comparative credit safety of corporate and noncorporate borrowers at commercial banks.

Are corporations always better credit risks? Such an analysis has been missing in the credit picture. As one test of the comparative credit risk involved when dealing with corporate and noncorporate borrowers, an analysis of business loan repayments to commercial banks in Ohio was undertaken.² The information obtained, while of general interest, may also prove useful to banks in setting credit terms and to bank customers when weighing considerations as to the advisability of incorporation.

Data were compiled for business borrowers in the fields of mining, manufacturing, retail trade, and wholesale trade. Figures were gathered showing the number of loans collected on schedule as well as the number of loans in default. The term "default" as used in this Ohio survey covers both workouts and liquidations.

Approximately 660 banks were contacted by mail and were requested to complete a relatively simple tabular

¹ *Member Bank Commercial and Industrial Loan Survey, 1947*, Division of Administrative Services, Board of Governors of the Federal Reserve System, Washington, D. C.

² The study was supported from funds which were granted to the Ohio State University by its Research Foundation for aid in fundamental research and was undertaken with the endorsement of the Ohio Bankers Association.

form which did not ask for the type of information that banks are usually reluctant to give. Nothing was asked, for example, concerning the exact amounts of credit extended to specified borrowers, nor were the names of borrowers requested. In brief, bankers were asked to fill in a table showing the total number of loans made in certain industry groups and the number of these loans which involved workouts or liquidations. Each bank was told that the results of the survey were to be published in the form of aggregates for groups of banks.

The year 1950 was chosen for the survey although the figures showing workouts and liquidations for loans extended were, of course, much lighter than they would be in depression years. That year was selected because there was a substantial number of workouts and liquidations in 1950 and because relatively current data were desired for the study. A more recent year could not be chosen since it was necessary that the credit experience with these borrowers be reported.

Workouts were classified in three ways — those involving (1) an extension of part of the credit, (2) an extension of the full amount of the credit, and (3) an addition of further funds to those outstanding. Liquidations were classified in two ways. The first involved the number of composition settlements. A composition settlement occurs when a bank agrees to accept some amount less than the face value of the loan and in return grants a full discharge of indebtedness. The second included the number of legal bankruptcies.

The Federal Reserve survey referred

to had shown that approximately two-thirds of total outstanding business notes in member banks had an initial maturity of less than a year and also that 70 percent of outstanding bank loans to very small enterprises had been short-term. The present study therefore was confined to short-term loans, for which there was relatively current experience. In addition to being a realistic approach, this simplified the bankers' work in recording the data by eliminating the necessity for going back through old records. The study was further limited to loans of a \$5,000 minimum since this likewise increased the chances of getting the cooperation of banks through expediting the gathering of the data; at the same time this limitation did not hurt the study by ruling out small business borrowers. Many small business borrowers take out loans of \$5,000 or more.

On the whole a good response was obtained from Ohio bankers when one considers that in many cases the collection of the data involved at least a half day's work for some employee. A total of 125 banks submitted the information in the form in which it was requested. Many bankers expressed an interest in filling out the table merely to see what the picture in their own bank was like. Some of the smaller banks located in farming districts had loans which were chiefly of the real estate and farm chattel type along with a few personal consumer loans. In these cases in which the loans did not come within the range of the study, the relevant data were restricted.

Some rural banks, for example, had extended many agricultural and per-

sonal consumer loans but few business loans. A number of banks indicated that they were unable to supply information because they did not regularly maintain it in the form requested. Others, chiefly small banks, indicated that they were unable to furnish data because of a shortage of employees. The total response, nevertheless, exceeded that usually considered adequate in similar types of surveys.

The 125 respondents supplied data on 4,049 loans. These respondents form a representative sample of the universe of banks in Ohio. The data were analyzed for all banks combined as well as for reporting banks according to size measured in millions of dollars of deposits. This latter method of analysis makes it possible to compare the experiences of all reporting banks of any particular size.

This Ohio survey shows that only when the repayment records of all loans in the sample are lumped together are corporations better credit risks. On the other hand, an industry-by-industry analysis shows that unincorporated borrowers are sometimes equally good or even better credit risks than are corporations. Of the four industry groups studied in Ohio this was especially true of mining and retail trade. Noncorporate borrowers appear to be better credit risks in mining, whereas in retail trade noncorporate borrowers are apparently as good a risk.

The 4,049 short-term loans making up the sample include 2,395 loans extended to incorporated borrowers and 1,654 loans extended to unincorporated borrowers. The accompanying table presents some of the data gath-

ered in the study. The table is computed on a percentage basis to facilitate comparisons.

Seventy-three percent of the loans extended to corporations and 63 percent of the loans extended to noncorporate borrowers were not defaulted. Conversely, 27 percent of the corporate loans and 37 percent of the noncorporate loans were defaulted.

When the percentage figures are presented by type of business and size of loan, however, the unincorporated borrowers in mining have the better record; incorporated borrowers repaid 66 percent of their loans as scheduled and defaulted on 34 percent of their loans in contrast to the unincorporated borrowers who repaid 85 percent on time and defaulted on only 15 percent of their loans. These loans in the mining industry are all between \$5,000 and \$100,000 for both types of borrowers. In the case of loans of similar sizes in retail trade the difference between corporate and noncorporate business borrowers is found to be negligible — the percentages of loans not in default being 66 percent for corporations and 65 percent for noncorporate borrowers. In addition, some of the corporate borrowers in retail trade had larger loans which fell in the \$100,000 to \$1,000,000 class. Of these, one-fifth were in default.

As shown by the table, corporations are definitely better credit risks in the fields of manufacturing and wholesale trade where the picture is much the same in both cases. In manufacturing, for example, with regard to loans of the size \$5,000 to \$100,000, 79 percent of the loans extended to corporations

**Percentage Distribution of Repayment of Short-Term Loans Extended to Specified
Business Borrowers by Ohio Commercial Banks in 1950**

Type of business and size of loan (in thousands of dollars)	Percentage of loans not defaulted	Percentage of loans defaulted	Percentage of loans involving workouts ^a		
			Extension of part of credit	Extension of full amount of credit	Addition to funds out- standing
	Incorporated businesses				
Manufacturing					
\$5 and under \$100.....	79	21	8	13	1 ^b
100 and under 1,000.....	64	36	28	8	..
1,000 and over.....	..	..	..	..	..
Mining					
\$5 and under \$100.....	66	34	17	17	..
100 and under 1,000.....	..	..	..	..	..
1,000 and over.....	..	..	..	..	..
Wholesale trade					
\$5 and under \$100.....	74	26	15	10	1
100 and under 1,000.....	95	5	2	3	..
1,000 and over.....	..	..	..	..	..
Retail trade					
\$5 and under \$100.....	66	34	18	12	3
100 and under 1,000.....	80	20	10	10	..
1,000 and over.....	..	..	..	..	..
Subtotal.....	73	27	14	12	2
	Unincorporated businesses				
Manufacturing					
\$5 and under \$100.....	66	34	19	14	.5
100 and under 1,000.....	..	..	..	..	..
1,000 and over.....	..	..	..	..	..
Mining					
\$5 and under \$100.....	85	15	10	5	..
100 and under 1,000.....	..	..	..	..	..
1,000 and over.....	..	..	..	..	..
Wholesale trade					
\$5 and under \$100.....	52	48	28	20	x ^c
100 and under 1,000.....	..	..	..	..	..
1,000 and over.....	..	..	..	..	..
Retail trade					
\$5 and under \$100.....	65	35	20	12	3
100 and under 1,000.....	..	..	..	..	..
1,000 and over.....	..	..	..	..	..
Subtotal.....	63	37	21	13	3
Total.....	69	31	17	12	2

^a No loans to incorporated businesses involved liquidations. Among the nonincorporated businesses included, only in manufacturing, loans of \$5,000 to \$100,000, did loans involving liquidations reach the significant level of 0.5 percent.

^b Percentages may not sum exactly in all cases because of rounding.

^c Less than 0.5 percent.

Source: Reports from 125 Ohio commercial banks.

were not defaulted and 66 percent of those extended to noncorporate customers were not defaulted.

In summary, it appears that in Ohio when this particular test of credit risk is used and when the data are analyzed industry by industry, corporations are not always better credit risks in spite of the fact that they have been preferred bank customers. Noncorporate business borrowers in mining in Ohio appear to be better credit risks than incorporated borrowers, while in retail trade noncorporate borrowers are apparently as good a risk.

A priori one would expect corporate customers at banks to be safer than noncorporate borrowers for a number of reasons. The corporation is completely impersonal and its life ordinarily continues regardless of any misfortunes that may befall some of its owners. In

addition, it is often alleged that the ability of management is greater under the corporate form of organization where there are added responsibilities. Then, too, since corporations are required to keep complicated records for tax purposes, it seems that they would be very well able to supply certain kinds of specific information in which bankers are interested.

The present study did not attempt to cover the reasons for the results obtained, but it has been generally acknowledged by economists that the added responsibilities and costs of forming and maintaining a corporation make the choice of this type of enterprise undesirable and uneconomic in many instances. Some businesses are best run as partnerships and individual proprietorships, and at the same time they may be very good credit risks.

The Outlook for the Irregular Air Carriers

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THE CIVIL AERONAUTICS ACT requires that, unless the Civil Aeronautics Board rules otherwise, an air carrier possess a certificate of public convenience and necessity as a prerequisite to the offering of common carrier air service. Since the enactment of this statute in 1938, the CAB has exempted from the certificate requirement a class of carriers now technically referred to as irregular carriers. Recently the air transport industry, Congress, and the Board itself have posed questions regarding the future role these carriers are to play in supplying the nation with commercial air transportation. In the light of recent interest, it seems appropriate to evaluate the scope and consequence of irregular carrier operations and to determine their value as a means of (1) satisfying the congressional aim of promoting commercial aviation, and (2) providing the consumer with the type and quantity of air service desired.

Résumé of the Exemption Policy

Initially at least, excusing certain carriers from the requirement of obtaining a certificate appeared to be a natural method of encouraging aviation growth. Once commercial flying was established, the Board's immediate concern was with the development of an orderly network of certificated routes serviced by scheduled lines. At the same time it appeared expedient and desirable to permit fixed-base op-

erators using small non-transport type aircraft to supply a limited amount of nonscheduled air transportation as an adjunct to other aviation activities. This was accomplished by the issuance of a regulation authorizing operations of this nature to be conducted without a certificate. These carriers satisfied a particular need for service, but the sporadic and irregular character of their flights as well as their minor economic significance made traditional regulation onerous. To avoid stifling this type of service with unduly burdensome restrictions, the Board exempted these carriers from virtually all economic regulation.

Although data concerning fixed-base operators are incomplete, it is apparent that prior to World War II, the service offered by these carriers was of the type contemplated at the time of the original exemption order. The war, however, brought a pronounced transition in the character of the exempted organizations. Hostilities helped to stimulate an astonishingly rapid growth in the demand for commercial air transportation while at the same time the aircraft available for scheduled service diminished in absolute numbers and many would-be air travelers were forced to patronize other means of transportation. Capitalizing on the certificated carriers' inability to satisfy effective demand, the fixed-base operators expanded service. Coincident with this growth was the

return from service of many trained pilots. Observing a sudden availability of war surplus aircraft which could be obtained for little or no immediate cash, some of these individuals started airlines as a means of earning a livelihood. As would be expected, the culmination of these circumstances was a large expansion of noncertificated transport. But the change in volume was of less significance than the altered nature of the operations. Unlike the prewar period, large nonscheduled carriers came to rely almost entirely on revenue gained from carrying property and passengers in standard airline equipment. Moreover, a marked increase in the regularity of flights between major metropolitan centers caused the operators to assume the appearance of scheduled carriers.

The Civil Aeronautics Board, alert to the change in nonscheduled transport, instituted an investigation to determine the need, if any, for modifying the blanket exemption. The investigation led to a clearer definition of proper nonscheduled operations and resulted in the rescinding of regulations exempting noncertificated carriers from the unfair and deceptive practices section of the Act. Furthermore, each carrier was to submit reports covering the size and character of its operations. Concurrent with this decision the Board issued two cease and desist orders on the finding that noncertificated lines engaged in scheduled service.¹

As a result of the reporting requirement, the Board in 1947 ordered all

irregular carriers to obtain individual letters of registration and late in 1948 it effectively eliminated new entry by ceasing to issue letters. By 1949 the larger irregular carriers were subject to practically all the regulations governing the scheduled carriers.² The tendency of the irregulars to go beyond the sphere of nonscheduled transport and to engage in questionable business practices led the Board to stronger action.³ In May, 1950, a rigid standard for evaluating the legality of large irregular carrier operations was enunciated.⁴ The Board developed the "3 and 8" flight rule to avoid the perennial plea that the ambiguity of the regulations made it impossible to determine clearly the irregular carriers' legal sphere of operations. Between 13 specified pairs of cities, it established a

² The Board distinguishes between large and small irregulars, the latter still being largely exempt from economic regulation. The smaller carriers use non-transport type aircraft and perform the functions the Board originally expected of exempted carriers. By 1950 the Board had issued approximately 2,400 letters of registration to small irregulars. *Large Irregular Carriers, Exemptions*, 11 CAB 609, 614 (1950).

³ The following statement may be viewed as an expression of the Board's thinking on this subject. "Respondent by its bold, flagrant, and persistent disregard of the Civil Aeronautics Act is in no position to plead for a lesser penalty. Respondent was under no duty to violate the Civil Aeronautics Act; this Board is under a sworn duty to enforce it. Failure to revoke its letter of registration and to apply all sanctions available for the prevention of further violations by it would make a mockery of the law, the enforcement of which has been entrusted to us by Congress." *Standard Air Lines, Inc., Noncertificated Operations*, 10 CAB 486 (1949) pp. 503-504.

⁴ *Large Irregular Carriers, Exemptions*, 11 CAB 609 (1950).

¹ *Page Airways, Inc., Investigation*, 6 CAB 1061 (1946); *Trans Marine Airlines, Inc., Investigation*, 6 CAB 1071 (1946).

maximum of three flights in the same direction in a period of four successive weeks. On all other routes a limitation of eight flights was invoked.⁵ The Board also abrogated all agreements devised for the purpose of enabling individual carriers to give infrequent and irregular service while the group as a whole furnished regular scheduled transportation.

In early 1951, the Board authorized unlimited operations in military traffic but at the same time instituted a comprehensive investigation of air service by large irregular carriers. Although the scope of the proceeding will necessarily be very broad, the crux of the investigation must be concerned with the future role of the irregular carriers in the air transport system. To appreciate the complexity of the issues involved it is essential to analyze the position of the various participants in the current controversy.

The Economic Status of the Irregulars

There are approximately 50 large irregular carriers in the United States operating about 140 aircraft of early-postwar vintage.⁶ Generally, they have restricted themselves to nonluxury service over high-density routes at fares below those established by scheduled

carriers.⁷ These lines have not been authorized to transport United States mail and accordingly do not benefit, as do the certificated carriers, from governmental assistance in the form of air mail compensation. The nonscheduled lines' present economic position and the means of obtaining it have caused certain groups to censure the Board for restricting the activities of these carriers.⁸ One argument with considerable emotional appeal points to the questionable transport policy which encourages the subsidized carrier but limits the expansion of lines receiving no governmental subsidies. There is the implication that the Board promotes the inefficient and uneconomical while at the same time the "dead hand of government" retards the natural and healthy growth of free enterprise. A closer investigation of the facts does not corroborate this view.

The certificated carriers directly competing with the irregular lines receive at present little or no aid in the form of air mail payment.⁹ On the other

¹ In 1951 irregular fares averaged 65 percent of the scheduled carriers' standard fare and 90 percent of the charges levied for coach-type service. *The Role of Competition in Commercial Air Transportation*, 82nd Congress, 2nd Session, Senate Subcommittee on Monopoly, Committee Print No. 9 (1952), p. 30.

⁸ The U. S. Senate Select Committee on Small Business has been highly critical of the Board's regulation. See *Report on Role of Irregular Airlines in United States Air Transportation Industry*, 82nd Congress, 1st Session, Senate Report No. 540 (1951); also *Future of Irregular Airlines*.

⁹ At the time of writing, nine major trunk lines were presumed to be paid mail rates containing no subsidy. It is true, of course, that these carriers may, under existing law, be eligible for future governmental aid.

⁵ The Board found this rule administratively inequitable and later was compelled to suspend it. For a discussion of this point see the statement of Oswald Ryan, Chairman, Civil Aeronautics Board, *Future of Irregular Airlines in United States Air Transportation Industry*, 83rd Congress, 1st Session, Senate Select Committee on Small Business, Hearings . . . (1953) p. 12.

⁶ *Future of Irregular Airlines*, 83rd Congress, 1st Session, Senate Report No. 822 (1953), p. 22.

hand, it is likely that all civil aviation will continue to receive extensive indirect aid in the form of airport and airway facilities which customarily have been furnished to all who would use them, free of charge or at fees far below the cost of providing the facilities. Since this subsidy is indiscriminately accorded, it seems, at least on a per-unit basis, that the subsidy currently granted is of equal benefit to all carriers engaged in offering commercial air transportation. Another basis for criticizing restrictive regulations arises out of the substantial impetus the irregulars have given the development of low-fare service. Although the dispute as to who originated coach-type service will continue, clearly it was only after the nonscheduled lines had successfully operated reduced-fare service that the certificated carriers cautiously experimented in this area; and even today scheduled carriers are wary of aggressive expansion of coach service which might divert traffic from first-class flights.¹⁰ It is easy to sympathize with the irregulars on the grounds that they pioneered and established coach-type service and that equity dictates that they be permitted to reap the rewards due the innovator. Yet in the final analysis, public policy must and will be judged by its service in the public interest rather than by its immediate

effects on the various classes of air carriers.

Peak-Load Requirements

It has been argued with some force that the irregulars are uniquely suited to meet both military and civil aviation peak requirements.¹¹ According to this contention the irregulars, unhampered by established schedules, are remarkably well adapted to shift equipment and personnel to the particular area or sector that may need an above-average volume of service. There is the assertion that encouraging the irregulars to supply the wants of the extra traffic would materially diminish the scheduled carriers' need for maintaining extensive equipment and personnel which generally are fully utilized only during the short periods of maximum demand. Thus, effecting a coordination of these two complementary services, it is held, would tend to push down the scheduled carriers' unit cost and at the same time enable the irregulars to provide the nation with a valuable service. This analysis tacitly assumes the existence of a relatively stable *aggregate* demand for air transportation throughout the year. Further, it is assumed that a seasonal rise in demand in one area is ordinarily balanced by a decline of equal magnitude in another. If evidence proves these assumptions to have a factual foundation, then a strong case might be made for the irregulars. Unfortunately, the peak-load problem is not so easily resolved. A study of traffic fluctuations shows that over-all traffic

¹⁰ To some extent this hesitancy on the part of the scheduled lines may be explained in terms of their critical financial position in the 1947-49 period, and the restraining influence of the CAB. For a good discussion of this point see H. A. Jones and F. Davis, "The Air Coach Experiment and National Air Transport Policy," 17 *Journal of Air Law and Commerce* 1 (1950).

¹¹ For a good presentation of this position see C. R. Cherington, "The Essential Role of Large Irregular Air Carriers," 19 *Journal of Air Law and Commerce* 411 (1952).

demands are not stable throughout the year. With the exception of National Airlines, all the major scheduled carriers consistently experience a substantial rise in the volume of sales during the third and fourth quarters of the year.¹² This being the case, the industry is responsible for maintaining throughout the entire year facilities necessary to satisfy the seasonal traffic increase arising during the last six months of the year. Thus, regardless of which class of carriers supplies the peak-load demands, stand-by equipment must be available a substantial portion of the time; and there is no reason to assume that the irregulars are able to provide the facilities more efficiently than the scheduled lines. In short, the mobility of the irregulars produces no special advantage when the peak load develops in all areas simultaneously.

The fact that the traffic structure of National Airlines runs contrary to the general peak-load pattern warrants a discussion of another aspect of this problem.¹³ Although National accounts

¹² An appreciation of the peak-load pattern is obtained by examining the quarterly operating income of the domestic trunk lines. During 1952 this income in millions of dollars was approximately 166, 192, 208, and 202 for the first, second, third, and fourth quarters, respectively. The conversion of these amounts to percentage figures for the respective quarters, using the third quarter as a base of 100, produces the following figures: 80 percent, 92 percent, 100 percent, and 97 percent. Calculations based on CAB *Recurrent Report of Financial Data*.

¹³ Unlike other lines, National's operating income is highest in the first quarter and lowest in the third quarter. During 1952 National reported \$8,314,943 for the first quarter and \$5,552,482 for the third quarter.

for a small fraction of the industry's total traffic, it might be argued that shifting irregular service between National's system and routes of other carriers would to some extent smooth out the effects of peak loads. Under such a procedure the irregulars would serve National's route during the first six months of the year, i.e., the period in which this carrier experiences a seasonal rise in traffic. During the latter half of the year, when National's traffic declines, the irregulars would be free to assist in satisfying the general peak load common to all major carriers except National. The logic of this proposal is less persuasive when the operational aspects of the plan are examined. Certain operational problems arise when equipment and personnel are transferred from one place to another. Complications related to ticket sales, fuel arrangements, hangar space, and crew quarters will tend to increase costs. Routine operations and long-range planning are improbable; long-term contracts are impracticable. These and other factors tend to offset the irregulars' advantage of superior mobility. In this respect a sharp contrast is noted when the irregulars are compared with the scheduled lines. The latter group furnishes the basic conveniences and ground facilities essential to permanent routes. Since many of the costs incident to these ground activities are of a fixed nature and do not vary proportionally with traffic fluctuations, there is at least some basis for the scheduled carriers satisfying the peak loads. An even stronger case is evident when it is recognized that the scheduled lines, through the use of leasing agreements,

endeavor to shift equipment commensurate with the peak-load requirements. It thus appears that the operational difficulties confronting the irregulars cause the cost of transferring equipment to be minimized when this is accomplished through scheduled carrier interline leasing arrangements. If this is true, then the scheduled lines, rather than the irregulars, are more competent to satisfy peak-load requirements.

Much the same conclusion is derived when military emergencies are considered. There is no known force causing military needs to fluctuate inversely with civil aviation requirements. On the contrary, intensified national defense activities generally give impetus to the expansion of both military and civil traffic. Under such circumstances the problem is not one of shifting idle resources from one sector to another; rather it is one of determining which sector is temporarily to be without adequate service. Since the entire industry lacks the capacity to satisfy effective demand, no one carrier class possesses any peculiar advantage for meeting the additional need accompanying defense build-ups.

The Competitive Aspects

Competition provides essential regulation and stimulation to a free-enterprise economy. On the basis of this principle, it is asserted that regulation restraining the irregulars from effectively competing with the certificated lines is inconsistent with the public interest. This contention with its implication that benefits to society are in-

herent in unrestricted interline competition can be summarily dismissed. The full fruits of unlimited competition are realized only when entry into and exit from an industry are within the realm of possibility. But even if such an unlikely situation prevailed, freedom of entry is frequently incompatible with the stable and reliable service expected and required of the common carrier class. To a considerable degree it was the advantages offered by an orderly air transport system which prompted Congress to rule out unlimited competition, at least implicitly, when it admonished the Board to provide for competition to the extent necessary in the public interest.¹⁴ Moreover, a realistic view of the irregulars' position leads one to suspect that these lines, rather than advocating unlimited competition, favor only the lifting of restrictive scheduling regulations, while the prohibition of "destructive certificated carrier competition" is maintained. In some measure at least, the success of the irregulars to date can be attributed to the restraining influence of the Board on scheduled carrier practices. It is difficult to envision the certificated lines, with their resources and record of satisfactory service, encountering serious obstacles if, unhampered by the Board, they should

¹⁴ Section 2 of the Civil Aeronautics Act provides in part that the Civil Aeronautics Board "shall consider . . . as being in the public interest, and in accordance with the public convenience and necessity . . . competition to the extent necessary to assure the sound development of an air-transport system properly adapted to the needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense . . ."

choose to expel the financially weak irregulars from the industry.¹⁵

Another strongly argued point stems from the assertion that unlimited irregular operations between major metropolitan centers would emphasize the inherent advantage of air transportation.¹⁶ This point has merit and is worthy of analysis. If these lines were authorized, as has been proposed, to operate between the major traffic-generating points, we could anticipate a vigorous competitive battle between the two classes of carriers. The present fare structure designed to compensate scheduled lines for serving unprofitable stations would be abandoned, and the charges levied on long-haul traffic would gravitate toward full cost. Assuming, within the relevant price range, an elastic demand for long-haul service, a reduction of fares to levels approaching full cost would materially stimulate the growth of this type of service.¹⁷ In short, authorizing the irregulars to provide unlimited long-haul service would emphasize the type of service for which

the aircraft enjoys an inherent advantage. The Board has taken exception to such a position.

The Board, apprehensive of a repetition of the airline depression of 1947-49, fears additional certification of service would divert traffic from existing certificated lines and cause unit cost to rise. This, of course, is possible in the short run, especially if general economic activity should decline; but it is unlikely in the long run if studies covering the economic character of the industry¹⁸ and the long-range demand forecasts have validity.¹⁹ The Board has further taken the position that additional competition is unnecessary because substantially the same results can be achieved through regulation.²⁰ This appears to deviate from the frequently enunciated policy that regulation is no substitute for competition.²¹ The final

¹⁸ The industry does not appear to benefit from significant economies of scale. See H. D. Koontz, "Domestic Air Line Self-Sufficiency: A Problem of Route Structure," XLII *American Economic Review* 103 (1952).

¹⁹ In 1951 the Civil Aeronautics Administration conservatively estimated that domestic airline-passenger miles would increase from 10 billion in 1950 to 18.1 billion in 1960. *Airline Passengers* (Revised Edition, 1951). Although this estimate, in view of the 14 billion units recorded in 1953, appears low, it nevertheless is indicative of secular air-travel needs.

²⁰ *Transcontinental Coach-Type Service Case*, CAB Order Serial No. E-5840 (November 7, 1951), p. 6.

²¹ "The full development and technological improvement of air transportation cannot be gained by regulation alone; to achieve improvements an incentive is necessary and under the act the incentive should flow in part from competition between air carriers." *Transcontinental & Western Airlines North-South California*, 4 CAB 373 (1943). See also *Acquisition of Western*

¹⁵ An analogous situation existed when the trunk lines exerted strong competitive pressures on the all-cargo air carriers. To protect the all-cargo lines the Board was forced to establish minimum rates. See *Air Freight Rate Investigation*, 9 CAB 340. The air-freight carriers allege a conspiracy among scheduled lines to eliminate air-freight competition. See *Slick Airways v. American Airlines*, 204 F 2d 230 (1953).

¹⁶ The name "irregulars" clearly would be a misnomer if these carriers operated as proposed. For convenience, however, this term is used throughout the paper.

¹⁷ The assumption of an elastic demand appears realistic. Coach service, insignificant in 1949, accounted for 22 percent of the total revenue passenger miles reported for 1953 by the domestic trunk lines. CAB, *Annual Report*, 1953, Appendix 10.

economic argument against extensive irregular competition is based on traditional public utility regulation.²² An analogy is drawn wherein the public utility organization averages a satisfactory return by covering the losses suffered on high-cost service with income realized from the more profitable accounts. This practice is justified by the fact that ordinarily there is no satisfactory substitute for public utility service that is obtainable at equal or lower cost. This is not necessarily true of air transportation. As a rule, surface vehicles are capable of successfully replacing the aircraft over short distances at a lower unit cost. It is true, of course, that a decline in earnings on long-haul service would be accompanied by the cessation of service to unprofitable stations unless additional revenue were obtained from some other source. Under the prevailing philosophy new income is likely to take the form of increased mail payments to the scheduled lines.²³ This, however, presents no serious obstacle. It is sounder economics

Air Lines by United Air Lines, CAA 739 (1940) and *Colonial Air, et. al.*, *Atlantic Seaboard Operations*, 4 CAB 556 (1944).

²² For a good presentation of the public utility analogy see the dissenting opinion of Member Jones in the *Trans-Texas Certificate Renewal Case*, CAB Order Serial No. E-5110 (February 5, 1951). Although this case was not concerned with the irregular lines, the principle discussed is applicable here. See also E. C. Johnson, "Utilizing Trunk-Line Profits to Support Local Service," 20 *Journal of Air Law and Commerce* 203 (1953).

²³ Discontinuance of service to those stations unable to support operations is another alternative. In light of congressional policy promoting commercial aviation, such action appears unlikely.

to preserve the existing system of routes, if it is to be preserved at all, by means of an increase in governmental assistance than through the medium of a fare structure retarding natural expansion. This conclusion appears inevitable in view of long-standing governmental aviation policy which is one of prolonged promotion and extensive financial assistance.

The Outlook for the Irregulars

An anomalous situation was created at the close of World War II by the discharge of military personnel trained in aviation and by an abundance of transport-type aircraft available for little or no immediate cash. From this situation and the Board's exemption policy evolved the large irregulars.

At present the outlook for this class of carrier is not bright. Since many of the lines have circumvented and sometimes flagrantly violated Federal regulation, one would expect the Board to have developed a certain amount of animosity toward irregular carriers. Moreover, analysis shows these lines to be without peculiar characteristics helpful to resolving the industry's peak-load problem. On the other hand, greater freedom of action for a limited number of the more successful would advance the expansion of the type of service for which the industry has a natural advantage. Although certification of the irregulars may promote the public good, this in itself does not guarantee them a place in the industry. Those lines having a small clientele and using obsolete aircraft would be competing on

an equal basis with the powerful and financially strong scheduled lines.²⁴ Under such circumstances, barring direct governmental assistance, one would expect only the most resourceful and tenacious to survive.²⁵

It is improbable that the Board's investigation of the large irregulars will be completed before 1955. In the meantime the Board has shown some leniency toward lines which in the past have violated CAB regulations.

This investigation gives the Board an

²⁴ The Civil Aeronautics Board lists the assets of the 13 domestic trunk lines and the 56 large irregulars as \$550,900,000 and \$13,700,000 respectively. *Annual Report* (1953) Appendix 16. The great difference in financial resources militates against successful irregular operations.

²⁵ It is perhaps desirable to point out specifically that although the irregulars are likely to fail in the conventional business sense, they nevertheless may be used as an instrument for promoting the public interest. Even a brief period of vigorous competition between these lines and the scheduled carriers would have a pronounced effect on scheduled carrier policies, which could materially aid air transport growth.

opportunity to reverse its earlier decision²⁶ rejecting the use of the irregulars as a means of advancing the natural and economic growth of air transportation. Whatever conclusions the investigation may produce, it may be interpreted as a portent of future policy. If action is taken to curtail the irregulars, one may safely rule out the possibility of a policy change which would substantially hasten the growth of long-haul service. On the other hand, if the irregulars are permitted to compete on an equal basis with the scheduled lines, one may expect future policy to place a greater emphasis on the inherent advantages of air transportation and the promotion of long-haul service.

Conflicting signs preclude any predictions, but it is evident that the financial well-being of the scheduled lines will be a major factor in any decision.

²⁶ In the *Transcontinental Coach-Type Case*.

Stalemate in European Union

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An integration of Europe, whatever its precise form, which broadened the basis of her economy, eliminated customs barriers and competing currencies, and enabled the basic industries of food, fuel, iron and steel, and engineering to be organized to serve a market of two hundred million persons, would unquestionably be followed by a general increase in economic prosperity and political strength; but the particular sacrifices and temporary embarrassments entailed by it would not be a trifle.

Reason is on its side; but the natural human egotisms of interest and emotion; of locality, class and occupation; of regional loyalties and national pride, will rally to resist it.

PROFESSOR R. H. TAWNEY¹

IN DECEMBER Secretary of State Dulles warned Western Europe that the United States would be forced to make an "agonizing reappraisal" of its European policy if there were a failure to ratify the European Defense Community "soon." He implied that in such circumstances the United States might withdraw her land forces from the Continent of Europe. He said that if the European nations intend to commit suicide they would be left "... to commit it alone." His statement met with opposite reactions in America and in Western Europe.

In America almost all shades of political opinion welcomed, or at least did not oppose, Dulles' remarks. The so-called liberal wings of both political parties have long looked to European unity as the solution for Europe's ills. Those of a more nationalistic or neo-isolationist stand welcomed the warning as an expression of a tougher American policy toward America's allies. Even those who decried the tone of the

statement sympathized with its ends — the promotion of European union.

In Europe, reactions differed. Cries of "threats" and "intimidation" arose. Appeals were made not to push things faster than events could carry them. Even the astute and responsible *Manchester Guardian* commented:

Has not Mr. Dulles dangerously over-estimated the importance of rearming Germany? What he implies is that if there is to be no German contribution through the European Defense Community then almost the whole structure of European defense must be torn down.²

The *Guardian* called it a "drastic threat" and continued, "The suicide would be America's as much as Europe's."

Almost four months have now passed³ since Dulles gave his warning. Since then even greater pressures have been applied to the French so that EDC might be ratified in time for the opening of the Geneva Conference on April 26. The French response has been further delay, and new roadblocks to

¹ Quoted by R. W. G. Mackay, *Heads in the Sand* (Oxford: Basil Blackwell, 1950), p. v.

² *The Manchester Guardian Weekly*, December 17, 1953, p. 8.

³ This paper was prepared in early April.

agreement, like the reopening of the Saar issue and West Germany's right to create an Army while France is still an occupying power, have been thrown up. Only the Dutch, Belgian, Luxemburg, and West German Parliaments have ratified EDC, and the latter is contingent on French approval. There are also reports that Italy will delay ratification until the Trieste problem is settled to her satisfaction. EDC has, therefore, been delayed and further action leading toward European union has been postponed. The obvious conclusion is that, except for some major unforeseen event, the European union project, in its present form, has reached a stalemate. The purpose of this paper is to explain the forces and events which have now made the attainment of European union a very distant hope at best.

From the time of the Foreign Assistance Act of 1948 (the Marshall Plan) America's goal has been a Western European federation. The twin purposes of Marshall Aid, in the words of the Act, were to advance European recovery and "to . . . achieve . . . economic co-operation in Europe which is essential for lasting peace and prosperity." Dulles' statements can only be viewed as a continuation of that policy. He is supported in Europe by many groups and individuals. Before explaining why the stalemate exists let us enumerate the arguments which have created European support for union and the rationale of those who are convinced by them.

First and foremost, there are powerful economic arguments. The appeal

for economic integration, a single market for 280 million people, the lowering of trade barriers, and the specialization which may result, are overwhelming arguments and hardly require elaboration. The goals of standardization of industry, a common currency, a more progressive and specialized agriculture, the unification of basic industries, and the construction of European authorities for trade, power, coal, and iron and steel remain major objectives for many Europeans and account for much of the impetus toward federation. One need only read the massive reports and documentation of the Organization for European Economic Co-operation (OEEC) to gain some feeling for the economic motivation.

The economic arguments, while painfully obvious to all Americans and most Europeans, lead to an oversimplification of the European problem. To look at European problems from the vantage point of the American continent and its nation-wide market makes many Americans impatient with the slow-moving progress toward European integration. The world, however, is not governed by economics alone. In fact, the Marxian view that all history may be interpreted by examining economic forces is patently false, for other factors, especially political ones, are of equal or greater importance. Some term like "political economy," first used in English by Sir James Steuart in the eighteenth century, needs to be revived and used if the barriers in the path of European union are to be understood. Max Beloff, an eminent British student of European and American institutions, captures the

American attitude toward European union, and its gross oversimplification, in the following passage.

We . . . tend to think of it [federation] in pragmatic terms, to argue as to its value . . . as a means of reproducing in the Old World some of the economic advantages of a large single market. . . . The over-simplification of political issues prevalent in America makes a large-scale change of this kind particularly appealing. At last, they feel, those Europeans are showing some kind of sense; at last they are willing to forget the past feuds and wars; at last they are beginning to behave like sensible Americans: the Council of Europe is something like the great Constitutional Convention; Strasbourg is a modern Philadelphia; and Dr. Adenauer and M. Schuman are the Hamilton and Madison of the twentieth century.

How plausible it all sounds — and how misleading it all is! So far from being a simple acceptance of the logic of contemporary economics and strategy, the movement . . . is made up of diverse and complex strands; its supporters are moved by hates as much as by loves.⁴

If, in fact, the economic arguments are inadequate and misleading, what is the nature of the "diverse and complex strands" in the European movement?

Perhaps equal in importance to the economic arguments in the minds of Europeans is the knowledge that the nation-state has declined. It is no longer an adequate structure for individual safety on the Continent of Europe. It is not surprising that two world wars, interwar depression, and postwar austerity should disillusion countless Europeans concerning the ability of the nation to provide for the common de-

fense and security. In the small Benelux countries this view is held overwhelmingly. In Western Germany, shackled after World War I, humiliated in World War II, and whose Eastern and Western frontiers, since 1870, have gone in and out like an accordion, this attitude is shared by some of the most democratic and farsighted elements. In France, almost all groups agree, at least in private, that France has declined from a first- to a second-class power and that economic and military security are not now available in the structure of the nation-state. It is from center groups, from men like Pleven, Reynaud, Bidault, and Robert and Maurice Schuman, and from a few Socialists like ex-President Auriol and André Philippe, that a European union is seen as a positive alternative to the declining French national spirit. These men, among the most powerful in France, have risked their political fortunes to be valiant allies of the American quest for European union. They too have allies, among them Adenauer in Germany, Spaak in Belgium, and former Premier De Gasperi in Italy.

Not all who hold that the nation-state has declined, however, seek the same alternatives as the federalists. In France, on the far right, are the De Gaullists, now shorn of power owing to internal frictions, who wish to revive the French national spirit by larger doses of militarism, patriotism, and narrowly nationalistic activities. The resignation of Marshal Juin is only the most recent manifestation of this point of view. On the far left the Communists would lead France into the Russian

⁴ Max Beloff, "Europe from Lorraine," *The Twentieth Century* (London), CLII (1952), 266-67.

empire for the tortured reasons which only the Communists could hold. They derive some undeserved support, however, from non-Communist Frenchmen, almost a third of whom have voted Communist in postwar times, who view their present Government as inadequate, who fear the devastation of another war, and who have watched while precious little progressive legislation has emerged from the merry-go-round of the French National Assembly. In Germany, too, there are still extremists who wish to regain the "honor" of the German Army, who would unite Germany by force, and who lament the Nazi failure to conquer Europe. One must recall that from the time Bismarck defeated the French in 1870, "Europe lost a mistress and gained a master."

Yet another powerful influence on the European scene, and one which is helping to forge the unity of Europe, is the existence of the Soviet menace. Good does not always come from evil, nor is the Soviet threat a justification for all that takes place in the name of anti-Communism. Yet men and nations do act on their fears as well as on their hopes. Sir Winston Churchill, speaking in the House of Commons on February 25, 1954, made the point in his own inimitable style.

No-one but Stalin, nothing but the actions of Russia under his sway, could have made that alliance and brotherhood of the English-speaking peoples on which the life of the free world depends come so swiftly and firmly into being. Nothing but the dread of Stalinised Russia could have brought the conception of united Europe from dreamland into the forefront of modern thought. Nothing but the policy of the Soviets and of Stalin could have laid the foundations of that deep and

lasting association which now exists between Germany and the Western World, between Germany and the United States, between Germany and Britain and, I trust, between Germany and France. These are events which will live and which will grow while the conquests and expansion achieved by military force and political machinery will surely dissolve or take new and other forms.

The decline of nationalism, the need for economic integration, and the Russian threat, are major factors promoting European union. To them may be added other important arguments. Of these the most pressing is the solution of the "German problem." France has been overrun on three occasions since 1870. Even then the consequences of German power were foreseen by European statesmen. William Gladstone, four times Prime Minister of Great Britain, remarked on the German victory in 1870 that "... I have an apprehension that this violent laceration and transfer is to lead us from bad to worse, and to be the *beginning* of a new series of European complications."⁵ The French republican leader Gambetta asserted that "France is at the mercy of Germany. We are in a state of *latent* war; neither peace, nor liberty, nor progress is possible in Europe."⁶ The French fear the Germans, and rightly so. Yet they know they must live as neighbors with the Germans. European union is seen by many as the only hope for them to walk together side by side.

⁵ John Morley, *The Life of William Ewart Gladstone* (New York: Macmillan, 1904), Volume II., p. 348.

⁶ Quoted by William L. Langer, *European Alliances and Alignments* (New York: Alfred A. Knopf, 1939), p. 15.

Other adherents to the ideal of a European community include the European neutralists. They see the Russians as the barbarians of the East and the Americans as the undesirable stepchildren of the West. The neutralists are converts to European union for mixed and subtle reasons. Some wish to abstain from a war between the two giants. Others wish to create a "third force" to hold the balance of power between America and Russia. Still others support an ancient European class, cultural, and religious tradition. They see European union as a re-creation of the Holy Roman Empire, and their "solution" to Europe's problem "... has historical roots that go back at least to Charlemagne and to the tripartite division of Charlemagne's Empire."⁷ Such a view is presented by Jean de Pange in *Les Meules de Dieu: France — Allemagne, Europe*.⁸ To him, "... the binding force is essentially a cultural one; and the cultural unity is that conferred by the common Catholicism of the lands in question."⁹

Out of these diverse and complicated arguments a plan was evolved which would unite Europe, solve the German problem, and provide for the common defense. The core of the plan was a new approach to the German problem. After World War I, backbreaking reparations and unilateral sanctions were imposed on Germany. The folly of such action was predicted by John Maynard Keynes in *The Economic Consequences of the Peace*. The results of Versailles were runaway inflation,

catastrophic depression, the downfall of the Weimar Republic, and the rise of Hitler. At the end of World War II the most knowledgeable European statesmen determined to avoid the mistakes of World War I. This time, restrictions on German sovereignty would be accompanied by restrictions on the sovereignty of other European nations. If the Germans were asked to lower their trade barriers against French coal, the French would be asked to lower their tariffs against German steel. Controls on the size and nature of a German Army would be applied equally to the French Army. In this way the dual goal of subduing German military power without creating grist for the mills of the German super-patriots would be achieved. Further, the plan was to evolve by stages.

The step-by-step approach is really the crux of the matter and the key to the present stalemate. First, a number of European economic authorities to control trade, tariffs, currency, power, and coal, iron, and steel were to be erected. After lengthy experience a European Parliament would be formed which would be large enough to encompass the individual authorities and strong enough to command universal respect. When the European Parliament had gained the confidence of the European people, and only then, Germany would be rearmed within a newly created European Defense Community. The timing of the plan, so essential to its success, was upset by the Korean War. Thus, the stalemate in European union.

At first sight Communist aggression in Korea, and the possibility of aggres-

⁷ Beloff, *loc. cit.*, p. 267.

⁸ Paris, Editions Alsatia, 1951.

⁹ Beloff, *op. cit.*, p. 270.

sion in Europe, would seem to be an event to hasten European union. In the end, the opposite has proven true. In order to defend Europe, America proposed the unilateral rearming of Germany. The French, recognizing the Russian threat but fearing a dominant, rearmed, and independent Germany even more, brought forth, almost over a week end, the ill-fated Pleven Plan. German soldiers under foreign commanders would be integrated into a common European Army. In this way Germany would at least not dominate Europe while the French Army was mired in the rice-paddies of Indo-China, while British forces were tied down in Malayan jungles, and while Americans were fighting in Korea.

The Pleven Plan, under which German soldiers would serve in French divisions in a European Army, proved impossible to implement. The French, as an alternative, proposed and signed EDC. EDC differs from the Pleven Plan in that 12 independent German divisions with their own commanders and under the German General Staff would serve in a European Army. Although the French first proposed the idea, they now refuse to ratify their own proposal. The end of the war in Korea and the death of Stalin made the defense of Europe less urgent to the French and aroused their latent fears of German domination. They refuse ratification, also, because only the first phase of the plan for European union, the establishment of an iron and steel authority under the Schuman Plan, has come about. Now Germany is to be rearmed before other economic communities have been erected. There is no

European Parliament strong enough to restrain German ambitions. To many, Dulles, in his statement last December, seemed to be saying, "Put the roof on the structure before the foundation has been laid." The timing has been upset and European union is off the rails. The French are reluctant to ratify EDC under such conditions and America's implied threat to pull out of Europe is an empty one.

At the present time, the entire structure of European union is threatened. The fear of German rearmament and American withdrawal has added fuel to the fires of those who opposed European union to begin with. This opposition is powerful in itself. What groups are there in this opposition and what are their arguments?

First, among the "diverse and complex strands" are those who favor a truly European federation but oppose the present plan. To them, Europe is both Eastern and Western Europe. They feel that no federation is feasible unless it includes Eastern Germany, Poland, Czechoslovakia, Austria, Hungary, Yugoslavia, Scandinavia, the Baltic States, Britain, and possibly Albania, Greece, and European Russia. Molotov aimed his Berlin Conference proposals for "European" defense at this group. They would argue, further, that not only is the present plan not a federation of "Europe" but that it is not even a plan for the federation of "Western Europe"—some 17 nations. Rather, they say, it is a plan for the federation of a part of Europe with a part of Germany, or five and one-half nations in all.

They base their opposition on the

question of permanency. Their argument runs as follows. Federation, by its nature, requires rigid checks and balances and subtle divisions of power if it is to achieve the purpose of uniting widely divergent interests. Further, the aim should be to establish a permanent European political and economic union, an organization which, like the United States, would last a century or more. The greatest threat to an existing federation is the disruption of that neat balance of power already established. This may be caused by expansion, growth, or a dominant section. The example of America's Civil War, caused in part by Northern industrial domination of the South and the westward movement which disrupted the sectional divisions of power established in 1789, is cited as proof. Why, they ask, should five and one-half nations federate now? In a very short time, by any historical measurement, one may reasonably expect Eastern and Western Germany to be united, Albania is ripe for plucking from the Communist orbit, and Scandinavia, Britain, Switzerland, and other European nations have interests elsewhere which forbid their joining such a rigid political framework. At a very early date in its existence, therefore, a five and one-half nation federation would face disruption either from expansion or by the domination of a new and united Germany. This argument has widespread appeal to elements both within and without the five and one-half Western European union countries.

Second, there is the religious argument. It is one, in Professor Tawney's

words, which has grown out of the "... natural human egotisms of interest and emotion." It has only small basis in fact or reason, unlike some other arguments, but it is a powerful factor in European politics nevertheless. Italy, France, Belgium, and Luxemburg are predominantly Catholic countries. Only Holland, about evenly divided between Catholics and Protestants, is not in this category. The Reformation failed to conquer all of Germany and created a permanent religious division there. The Catholics now dominate Western Germany and the Protestant Lutherans are to be found, mainly, in the Soviet sector. Almost all Western Germans desire unity with their East German brothers above all else. Dr. Adenauer and his Catholic Christian Democratic Party say that unity of Germany may be achieved only if Western Germany joins a European union and becomes strong enough to bargain with the Russians. The Social Democratic opposition to Adenauer, largely Protestant, claims that German unity will be prevented by joining the European union or EDC. They argue that Adenauer is insincere in wishing to join EDC for the purpose of hastening a reunited Germany. They say his real motive is to keep Germany divided in order that his Catholic Party may be assured of a permanent majority among the Catholic-dominated Western Germans. The area now proposed for European union, they assert, is that of the old Holy Roman Empire and its re-creation is the aim of the Big Three of European union, Adenauer, Schuman, and De Gasperi, all Catholics and all citi-

zens of Holy Roman Empire areas. The writings of men like Jean de Pange convince them that this is so.¹⁰

Third, men like Paul Reynaud, the ex-Premier of France and a fervent federalist, believe that Britain must participate in European union if France is to be protected against a revived and dominant Germany. Britain cannot join a European federation for at least two important reasons. First, she is not a Continental power. The nature of her geographic position gives her ties with the British Commonwealth and the United States which are equal in importance to those she has with Europe. Britain cannot join a federation to the exclusion of her interests in the Commonwealth and the Grand Alliance with America, any more than she could federate with the United States to the exclusion of Canada, India, and the rest of the Commonwealth. Second, the dominant political parties in Europe are far to the right of even British Conservative policy. Britain cannot join a rigid political organization in which there is a dominant anti-progressive majority. For the same reason, the Scandinavian countries refuse to join the present proposed union.

Finally, there are those who are against European union because they oppose the rearmament of Germany in any circumstances. Because German troops cannot fight or be quartered outside Germany, owing to the propaganda advantage the Kremlin would gain, they must remain within Germany. The price the Germans are requiring for participation in EDC is the removal of

Allied troops from Germany and complete German sovereignty. Such conditions are already contained in the Contractual Agreement between the Allies and Western Germany. A German Army means the revival of the German General Staff, "the men who held the stirrup while Hitler vaulted into the saddle," in the words of the American prosecutor at Nuremberg. The "good" or "democratic" German will not join the Army. It will be composed of some of the 10 million refugees from Iron Curtain countries now in Western Germany. It will be made up of ex-soldiers who desire to regain the "honor" of the German Army. The refugees have overwhelming reasons to support aggression. Their land, homes, and families are now behind the Iron Curtain. Even the great, and often maligned, Machiavelli devoted an entire chapter of *The Discourses* to "How Dangerous It Is to Trust the Representations of Exiles." The ex-soldiers have overwhelming reasons to favor aggression for they wish to regain former German provinces like Upper and Lower Silesia and that part of Poland which was, only recently, German soil. The Germans exhibit a schizophrenia about the Russians which is most confusing. There are, therefore, two dangers. There is a strong group within the German General Staff who have always felt that German brains and Russian brawn could control the world. This might lead to a *rapprochement* between them as existed only a few short years ago in the Nazi-Russian Pact. On the other hand, the Germans may seek a fight with the Russians, for "No one can understand the Germans

¹⁰ *Op. cit.*

who does not appreciate their anxiety to learn from, and to imitate, the West; but equally no one can understand Germans who does not appreciate their determination to exterminate the East."¹¹ Therefore, many Europeans feel that the rearmament of Germany, in any circumstances, means that Germany holds the fate of the Western World in the palm of her hand. The German finger would be on the trigger at the European equivalent of the 38th parallel where a war, if it begins, cannot be contained as in the Peninsula of Korea.

It is argued, further, that the rearming of Germany is the one way to unite the now disgruntled anti-Communist satellite peoples behind their Russian masters. The Poles, Czechs, and Austrians, among others, have as much to fear from attack and mutilation by the German Army as they have of domination by the Russians. The fear of the German Army may be summed up in words which the Comte de Mirabeau wrote more than 160 years ago. "Prussia," he said, "is not a country which has an army, it is an army which has a country."¹²

These arguments, and the fear of a revived German Army, even if true, have only limited validity. Western Germany will soon be independent. The real question is whether this is to happen within or without the European community. There have been proposals

for a neutralized Germany but as Foreign Secretary Eden asked in the House of Commons on his return from the Berlin Conference:

Is Germany to be neutral and disarmed? That is the first point I want to make. If so, who will keep Germany disarmed? Or is Germany to be neutral and armed? If so, who will keep Germany neutral?¹³

Nevertheless, the solution of the German problem, more than ever before, is the key to peace in Europe.

When Dulles told Europe to ratify EDC "soon," or suffer the consequences, he was speaking for the majority of American opinion and was emphasizing plans put forward by both Republican and Democratic administrations. He has done so, it appears, at the expense of European union. As Walter Lippmann has written only recently:

For more than a year the United States has been exerting pressure for the ratification of EDC — and where has it led to? To an ever more ominous deterioration of the relations between France and Germany.

It has been an enormous mistake, which yet may lead to tragic consequences in Europe, to have put the ratification of EDC ahead of the solution of Franco-German problems.¹⁴

What, then, should now be done? The economic arguments for European union have only limited validity because of the political, military, and historical complexities of the European problem. The original plan for union, and its timing, had great virtue because it recognized the diverse strands, the hates and loves, and the political as

¹¹ A. J. P. Taylor, *The Course of German History* (London: Hamish Hamilton, 1945), p. 14.

¹² Quoted by J. W. Wheeler-Bennett, *The Nemesis of Power* (London: Macmillan, 1954), p. vii.

¹³ The debate was held February 25, 1954.

¹⁴ Syndicated column, April 1, 1954.

well as economic motives behind the movement. Also, it avoided the superficialities of which Beloff complains. Should the United States now push the ratification of EDC even if this policy disrupts European union by its passage or tears down the structure of European defense by American withdrawal if it fails? Or, should the "agonizing

reappraisal" of American policy be one which would forgo EDC until the original timing of European union can be re-established? If not the latter, is there not the danger that EDC can be obtained only at the expense of European union or that European union can be obtained only at the expense of EDC?

Soviet Economic Growth*

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THE NATIONAL PRODUCT (national income) of the Soviet Union over the past 26 years has been growing at about the same rate as in the United States during a comparable period in its history; the proportion of this national product devoted to capital investment has been approximately the same in Soviet Russia as in the United States; and Soviet industrial output since 1928 has increased at a substantially faster rate than United States output at comparable periods since the American Civil War. However, there has been very little progress in agriculture, and industrial production has been directed largely toward the building up of a strong base in heavy industry, as is well known, so that the living standards of Soviet consumers have not risen concomitantly.

These conclusions emerge from the exhaustive studies of a group of Ameri-

can economists who have reported their findings in a recent book entitled *Soviet Economic Growth* and edited by Professor Abram Bergson, of the Russian Institute at Columbia University.

Gregory Grossman, of the Harvard Russian Research Center, concludes, in his study of "National Income," that Soviet real national income (or product) grew at a rate of 6.5 to 7 percent per year between 1928 and 1937 and between 1948 and 1950. During the period between 1929 and 1950 American gross national product grew at an average rate of 3 percent annually, but this contrast is not surprising, because one would expect national product to grow more rapidly at an early stage in a country's industrial development than at a more advanced stage. If we take the period in American economic development from about the end of the Civil War to World War I, we shall have a more nearly comparable economic stage for purposes of judging the magnitude of the Soviet achievement. The British economist, Colin Clark, has estimated, in *The Conditions of Economic Progress*, that United States net national product grew at an average rate of 4.5 percent per annum between the periods 1869-78 and 1904-13, a span of years in American economic development which would correspond roughly to the period of industrial "youth" in Soviet Russia under the Five-Year Plans. He estimates the rate of growth in Soviet net national prod-

* This article constitutes, in part, a review of *Soviet Economic Growth*, a collection of papers presented at a conference at Arden House, Harriman, New York, May 23-25, 1952, as edited by Abram Bergson, Professor of Economics at the Russian Institute, Columbia University, and published by Row, Peterson and Company, Evanston, Illinois, 1953. Some original material has been introduced by the writer, however, particularly in the discussion of industrial production, per capita and per man-hour income, and the causal factors in economic growth.

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uct at precisely the same rate between 1928 and 1937.¹

Population in the United States grew nearly twice as rapidly in the late nineteenth century, however, as Soviet population between 1928 and 1937, so that on a per capita basis the rate of growth in Soviet national income was more rapid than American. The approximate per capita rates of growth are: 4 percent in the Soviet Union between 1928 and 1937, 2.3 percent in the United States between 1869-78 and 1904-13, and 2 percent in the United States between 1929 and 1950.

Income per Man-hour

On the basis of man-hours worked throughout the economy, however, there was very little difference between the rates of growth of national output and income per man-hour in the two economies. Colin Clark has endeavored to calculate real income on this basis in the work cited.² He has attempted to estimate income per man-hour, in "international units" (representing the quantity of commodities exchangeable for \$1 in the United States over the average of the period 1925-34), in the

United States as far back as 1800, but only back to 1913 for Russia. He finds no census year in American history since 1800 in which income produced per hour worked in the whole economy, including agriculture, was as low as Russian income prior to 1940. In 1940 Soviet man-hour output was about the same as United States output in 1830. It is to be hoped that Clark will attempt to carry forward his Soviet estimates to more recent years in the new edition of his book which is reported to be in preparation. If that is done, it may be possible to start comparisons of the two economies at the dates in time when both were on the same man-hour output and income level.

The census year 1830 does not appear to be a typical year to use for the United States, however. In that year income per man-hour was considerably lower than in 1800, according to Clark's estimates, which must be very rough indeed for years so far antedating the collection of reliable statistics. Man-hour income did not exceed the estimated 1800 average until 1860, and thereafter it fell until the period 1874-83, when it was the same as in 1860. If we study the trend since 1874-83, which has moved generally upward, we find a rate of growth in per man-hour real income of approximately 12 percent per decade up to 1904-13, beyond which we do not wish to go because later periods would not be comparable with the Soviet period. In the Soviet Union, the figures reveal, the rate of growth was likewise 12 percent between 1930 and 1940. However, man-hour income was lower in Russia in 1930 than

¹ This estimate differs from Grossman's because of the use of a different method of weighting the components, but so long as the same method is used when comparing the two economies, no serious distortion is likely to occur. Grossman makes no effort to compute changes in United States income by the method he uses for Soviet income, which is essentially an effort to estimate changes in real economic costs and changes in the production possibilities of the economy.

² *The Conditions of Economic Progress*, (2nd ed.; New York: Macmillan, 1951), pp. 47 and 191.

in 1927 and 1928. Since then no overall improvement was registered until 1939, when man-hour income finally exceeded the pre-revolutionary 1913 level for the first time. After 1938 the increase was sufficient to make possible an 11.2 percent increase in real income per man-hour between 1927 and 1940. Between 1938 and 1939 the Soviet rate of increase was 8 percent, and between 1939 and 1940 it was 3 percent. However, we must not generalize from one or two years' experience. In the United States the annual increases, which are available for the first time only after 1914, were equally marked between 1914 and 1915, 1922 and 1923, and several other years.

Capital Accumulation

Discussing "Capital Accumulation and Allocation," Norman Kaplan, economist for the Rand Corporation, estimates the Soviet rate of investment in fixed capital in nonwar years at 15 to 20 percent of gross national product. He presents United States data showing virtually the same range, except for war and depression years, and notes that "the British rate of investment for 1870-1913 exhibits the same range." (p. 40) When "net" investment — investment minus capital consumption — is computed, the range becomes 6 to 11 percent for the United States and 12 to 15 percent for the U.S.S.R. Kaplan has reservations as to the accuracy of these figures, because of difficulties encountered in measuring capital consumption by estimates of depreciation, but he concludes that, in any event, the rate of capital formation has been *larger* in the U.S.S.R. than in the United States.

The investment statistics are broken down into various sectors of the economy and it is concluded, among other things, that the Soviet Union has directed a considerably larger share of its investment in manufacturing industry into the production of metals and metal products than has the United States. This is in line with the known fact regarding the stress placed upon heavy, basic industry by the Russians, at the expense of lighter industry producing mainly for the satisfaction of consumer wants. Since the war increasing shares of Soviet investment have gone into electric power stations, coal, petroleum, and ferrous and nonferrous metallurgy. The American ratio of investment in housing construction to total investment used to be substantially in excess of the Soviet ratio, but in recent years the gap has been narrowed. It might be narrowed still further, or perhaps eliminated, if we should enter a depression phase of the building cycle in American housing construction and the Soviets should continue to place increased emphasis on this aspect of their investment program.

In the Soviet Union *industrial* output includes mining and electric power production as well as manufacturing. The Soviet rate of increase in the output of these industries is found to have been approximately 9 percent since 1928. It was impossible to obtain United States data on mining and electric power prior to about 1900, but from related data it is concluded that the rate of increase of the combined output of these three branches of production was little greater between the American Civil War and 1900 than the rate of increase

of manufacturing production alone. The latter was 10.4 percent between 1863 and 1872, 6.4 percent between 1877 and 1892, 5.6 percent between 1897 and 1907, 4.2 percent between 1909 and 1918, and 4.4 percent between 1922 and 1929. It seems, therefore, as Kaplan says, that "the rate of increase of Soviet industrial output has substantially exceeded the rate of increase of United States industrial output in the post-Civil War period." (p. 77) The cause of this has been the direction of investment into heavy industry to a far greater degree in the Soviet Union than in the United States. "The investment of a ruble (or a dollar) in the production of producers' goods," the author points out, "yields a larger increase in *future* output than the investment of a ruble in other industries," and "the investment of a ruble in 'heavy' industry yields a larger increase in future output than the investment of a ruble in other industry." (pp. 79-80)

The Russians are fond of boasting of their superiority to the United States in current increases in their production of various industrial commodities. From one recent year to another, they maintain, they have increased the production of steel or coal or whatnot by a much greater percentage than has the capitalist United States between the same years. This will naturally be true of a backward nation in the process of rapid industrialization, compared with a more or less mature nation in which rates of growth are leveling off or declining. The proper basis of comparison is present-day Soviet Russia versus the United States at a roughly compa-

table period of our economic development. Such a period for the United States would be some time between the Civil War and the first World War, as noted previously, varying with the industry.

No two periods in human history are directly comparable, of course. The Soviet leaders have been able to draw upon the accumulated technology of generations in pushing their program of industrialization. United States entrepreneurs were able to draw, to some extent, upon British technology in the nineteenth century, but the Russians had a broader fund of knowledge and experience at their disposal. On the other hand, Americans were able to obtain investments from abroad in developing this country. Soviet Russia had to lift itself by its own economic bootstraps. Its people were required to sacrifice present consumption for investment to an unprecedented degree. We Americans had our early industrial growth interrupted by periodic economic depressions, the Russians by a war that devastated a considerable part of their territory. No doubt there are other significant differences between the two periods and the conditions peculiar to each area and to different industries. Nevertheless, a few comparisons of production in several basic industries may be suggestive of what can be done by way of economic development, under differing institutional environments and political conditions.

Output of Basic Materials

Between 1880 and 1906 (a period of 26 years) the United States increased its production of pig iron from 4.3 to

28.3 million short tons. Between 1928 and 1952 (24 years) the U.S.S.R. increased its pig iron output from 3.6 to 27.5 million short tons. These increases are of a roughly comparable magnitude. The periods include the United States depressions of 1885 and 1894-96 and the World War II invasion of Russia with its concomitant disruption of industry. Excluding the 1894-96 depression in the United States and the war period in Russia, Kaplan finds the rate of increase in Soviet pig iron production much greater than the American. In the United States the rate was about 10.5 percent during the late nineteenth century. In the Soviet Union the rate was 16.8 percent between 1928-29 and 1937, and 16.7 percent between 1948 and 1951.

Production of coal in the United States between 1870-71 and 1902-3 rose from 40 to 329 million short tons. In a considerably shorter period of time, 1928 to 1952, Soviet coal production rose from 39 to 331 million short tons.

Soviet production of electricity has increased somewhat more rapidly than American production at a similar period in the development of the industry. The increase was from 5 billion kilowatt-hours in the U.S.S.R. in 1928 to 102 billion kilowatt-hours in 1951 (a 23-year period), and in the United States from 6 billion kilowatt-hours in 1902 to 101 billion kilowatt-hours in 1928 (26 years).

Soviet petroleum production increased about the same amount from 1928 to 1937 (from 89 to 222 million barrels) as United States output from 1902 to 1911 (from 89 to 220 million barrels), but thereafter the Soviets en-

countered difficulty. The goal for 1955 is 504 million barrels, 53 million barrels less than United States production in 1921. If this goal is achieved, it will have taken the Russians 27 years to equal the American increase obtained in less than 19 years, despite the addition of a Polish-Bessarabian oil field to Soviet territory since World War II.

Soviet Russia increased its steel output between 1928 and 1952 about the same amount as the United States did between 1890 and 1915. The Soviet increase from 4.7 million short tons in 1928 to 38.6 million in 1952 was achieved in 24 years and the United States increase from 4.8 million in 1890 to 36 million in 1915 occurred in approximately the same period of time, 25 years.

Soviet production of rolled steel has increased somewhat more than United States production at a similar period in our history—from 3.9 million short tons in the U.S.S.R. in 1928 to 23.5 million tons in 1950 (a period of 22 years), compared with a rise from 3.5 million short tons in the United States in 1885 to 24.2 million tons in 1910 (a period of 25 years).

Radical changes which have taken place in technical methods of production in some of these industries since the nineteenth century may raise questions regarding the validity of some of these comparisons. Doubtless there have been changes also in the quality of some of the commodities produced. It is not intended that the comparisons should be used as conclusive proof of equal industrial proficiency on the part of the Russians and Americans. They may, however, indicate that marked indus-

trial advance can take place under other economic systems than capitalism, and this statement has not ordinarily been conceded.

Predictions to 1970

The authors of the various articles in the Bergson book pose the question whether the recent rates of growth in national product, capital formation, and industrial production in the Soviet Union can be continued during the next decade or two. Their conclusions vary somewhat because of differences in the reserves of natural resources and other factors which affect various components of the economy differently, but in general there is a consensus that there is likely to be a leveling off in the growth of those sectors of the economy which have been developing so rapidly in the past 25 years. On the contrary, if there should be a shift in investment policy from heavy industry to consumer goods, as appears to be taking place now to some extent, "the productivity of capital in previously neglected industries would be large" and might "produce large increases in standards of living in a relatively short period of time." (p. 87)

Among the Soviet economic resources whose reserves are bound to become depleted in the long run, if not in the next decade or two, are the following:

(1) The masses of raw labor hitherto underemployed in the rural areas and drawn by the Communists into non-agricultural pursuits. In fact, a reversal of this shift may be required, to some extent, to bring about the increases in agricultural production called for by recent decrees of the Malenkov regime.

(2) High quality iron ores, which will compel resort to lower quality deposits. The latter will require beneficiation before they can be used in steel production, and some of them are located deeper in the earth or farther from coal fields and existing steel plants.

(3) Coal, which will have to be mined in future under conditions of thinner seams, greater depths, and increasing difficulties with gas.

(4) Lead, which may be critically short by 1970.

(5) Zinc, which can be imported, however, from East Germany and Poland.

(6) Bauxite, which can be imported from Hungary.

If the Soviet national product were to continue growing at the rate maintained in recent years, the nation would attain our American 1950 level of national product by 1970, Gregory Grossman concludes. On a per capita basis this would mean an income of somewhere between 55 percent and 60 percent of the American 1950 level. Since American income presumably will continue to grow during the ensuing years, the Soviet income will be less than 55 percent of the United States 1970 level. Because it is believed that the maintenance of such a high Soviet rate of growth would require extremely high investment rates, the relative per capita consumption level of Soviet consumers vis-à-vis American would be still lower.

Labor Productivity

Professor Walter Galenson, of the University of California, has computed

in the Bergson book the ratio of Soviet industrial labor productivity to American, and also the rate of growth of Soviet productivity. He concludes that the productivity of Soviet labor in 1940 was about 40 percent of the American level. Between 1899 and 1939 United States labor productivity in manufacturing industry increased at an average compounded annual rate of 2 percent per man and 2.75 percent per man-hour. Since then the rate appears to have slowed down, but if a reasonably full level of employment is maintained, it is believed that an annual rate of between 1.5 and 2 percent per man-hour can be achieved during the next decade and a half. One American calculation of Soviet productivity estimates the annual rate of increase between 1928 and 1936 at 6.2 percent. Soviet official statistics indicate that the average rate has been about the same since World War II, but the annual rate has been declining. Professor Galenson believes a range of from 3 to 4 percent per year can probably be achieved between now and 1970. The rate is likely to be double the United States rate because of the Russian industrial backwardness, especially in consumer goods production. If these projected rates of increase are reasonable, Russian labor productivity is likely to be between 49 percent and 65 percent of American productivity in 1970.

Soviet industrial production has increased more than sixfold since 1928, according to a revised index prepared by Professor Donald R. Hodgman, of the University of California, and discussed in the current compilation. As pointed out previously, Soviet indus-

trial production seems to have grown about 9 percent a year, whereas United States manufacturing production grew more slowly over a similar span of years in our industrial history. Professor Hodgman believes an annual rate of growth of 8 percent may not be an unreasonable extrapolation from the recent Soviet trend. "This implies that the level of Soviet industrial output in 1960 may be more than twice that of 1950" and in 1970 more than 4.5 times as great. He cautions, however, that such extrapolation "into the future is more perilous the more distant the future, so that the figure for 1970 must be regarded as more speculative even than that for 1960." (p. 244)

Agriculture: Achilles' Heel?

When the situation in Soviet agriculture is considered, it becomes clear that this sector of the economy might be the Achilles' heel of the Soviet system. It seems from recent dispatches from Russia that this is now realized by the Soviet leaders. The fact that the general secretary of the Communist Party, Nikita Khrushchev, has been commissioned to tackle the agricultural problem and bring about a satisfactory increase in organization, morale, and production is an indication of the high priority now given to agriculture by the Communist Presidium. The enormity of the problem is indicated by some of the facts which are brought out in the book, *Soviet Economic Growth*.

The Stanford University Food Research Institute specialist, V. P. Timoshenko, gives reasons for concluding that Russian agricultural potentialities are sometimes exaggerated. For in-

stance, 30 percent of Soviet territory is completely barred from agricultural use by climatic conditions; land used for agriculture occupies less than one-sixth of the entire territory of the U.S.S.R. and if the poor pastures are excluded, less than one-eighth of the territory; the possibility of expanding irrigated farming in the U.S.S.R. is more limited than the highly publicized irrigation projects try to present, and even if successfully completed they promise to irrigate only 15 million acres of land out of a total U.S.S.R. crop area of 375 million acres. Commenting on this paper, Professor George B. Cressey, Syracuse University geographer, says: "The 200 million people of the Soviet Union and their descendants can never be as well fed as the 150 million citizens of the United States. The basic restrictions of short growing season, aridity, acid or alkaline soils, and continentality will always keep the USSR behind the United States in the quality and per capita quantity of its agricultural output. Nowhere in the Soviet Union is there an Illinois or an Iowa. The best the Soviets can offer is a Dakota or the prairie provinces of Canada." (p. 273)

Discussing "Agricultural Organization," Lazar Volin, of the United States Department of Agriculture, gives reasons for considering the possibility that "the kolkhozy in their present form of state-controlled compulsory collective farm units will disappear," (p. 291) possibly as a result of some kind of agrarian revolution. If this should happen, he looks for some form of cooperative use of farm machinery to take the place of the collective farms and machine tractor stations.

Joseph A. Kershaw, economist for The Rand Corporation, foresees a rise in farm labor productivity of perhaps 2 percent per annum and "a continued but gradual reduction of the farm labor force" so that, in 1970, agricultural output will be "some one-third higher than in 1950," per capita output will be substantially unchanged, but "the agricultural labor force will still be a quite large proportion of the total" labor force and "the USSR will still not be a 'highly industrialized nation.'" (p. 308)

The book under discussion also includes chapters on "Population and Labor Force," "Transportation," "Soviet Economic Relations with the Orbit," and "East-West Trade," but they will not be discussed here.

Conclusions

What shall we conclude, from the findings in *Soviet Economic Growth*, that can be of service to us in the present world situation?

First, perhaps, is the conclusion that the Soviet Union is unlikely to overtake or surpass America, in the foreseeable future, in the per capita production of most goods, or in per capita income.

Second is the conclusion that, if the Soviets alter the direction of their investment somewhat toward industries producing food and other consumer goods, they can raise the living standards of their people noticeably enough to enable them to make effective propaganda out of their achievement among peoples in most parts of the world outside of the United States and a few other advanced nations. They might conceivably outstrip the production and living standards of much of Western

Europe unless their regime develops irremediable weaknesses.

Many questions are suggested by a careful reading of *Soviet Economic Growth*, although few of them are asked specifically by the authors. One fundamental question, for instance, is: What are the causal factors in economic growth?

In the Soviet case, the factors which probably played the predominant roles may be enumerated tentatively as follows: (1) availability of vast natural resources, (2) existence of underemployed surpluses of labor in the rural areas, which were brought to the cities and trained for industrial tasks, (3) the resolute (and ruthless) decision of Stalin to follow the ideas of Lenin and industrialize the economy rapidly whatever the human cost, (4) the absence of widespread traditions of individual freedom among the people, which, if they had existed, would doubtless have provided obstacles to the authoritarian direction, (5) adoption of advanced American technology and the employment of American engineers to construct some of the original plants, in the early thirties, and to assist the Russians in introducing American techniques of production, (6) mass abstention from consumption and the consequent huge accumulation of capital which resulted in the construction of modern plants and installation of advanced types of machinery, (7) the willingness of the populace to follow their revolutionary leaders in new di-

rections and to undergo great sacrifices, (8) the vast size of the country and its large population, making possible the utilization of economies of scale in industrial plant, with its concomitant increasing returns, (9) the successful educational campaign to eliminate illiteracy and train personnel for industry, engineering, and science, and (10) fear of attack from foreign capitalist powers — the fact that this fear may not always have been well founded does not alter the fact that the fear has existed and continues to exist.

Under other institutional environments some of these factors might operate to impede progress rather than expedite it. For example, it has been generally accepted that the existence of individual freedom and initiative encouraged entrepreneurs to initiate the innovations that brought about the great economic growth of western capitalism. Yet in backward Soviet Russia the absence of these conditions and the activities of an authoritarian political regime seem to have accomplished similar economic results.

Another question that comes to mind after reading this book is: Might Russian economic growth have come about just as rapidly under a capitalist or mixed economic system? Even if not, how should we evaluate rapid rates of economic growth at the cost of various kinds and degrees of individual freedom? There are no ready answers to these questions, but they cannot fail to arouse genuine speculative interest.

Income Distribution and Economic Welfare or The Ants Who Sought to Maximize Satisfaction

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WHAT IS THE RELATIONSHIP between degree of inequality of income distribution and the level of economic welfare? This question has concerned economists at least since Bentham proposed that, since successive additions to one's property resulted in diminishing additions to one's satisfaction, economic equalization would, all other things remaining the same, maximize the total of individuals' satisfactions. Under the leadership of Marshall and Pigou this view achieved the status of orthodoxy. Recently, however, its underlying assumptions as they relate to the nature of utility and the legitimacy of making interpersonal comparisons have been seriously questioned. Efforts have been made, following the lead of Pareto, to develop a welfare economics free of interpersonal comparisons. Nevertheless, the question of how to treat income redistribution remains very much alive.

Part I of the following is a fable which is designed, not to point a moral, but to reconstruct and review the continuing discussion among economists of the relationship between income distribution and economic welfare. Part II, which continues in the spirit of the fable, concludes with the author's suggestion of how best to proceed in resolving the problem posed in Part I.

I.

Once there was a nation of ants who lived on a geometric plane. Each day they could be observed scurrying to and fro carrying objects which were deposited on a hill which reached toward the heavens some distance above the plane. This hill was known as the National Income or the Objective Hill. Its height was measured by the Index which had been constructed out of some of the objects which had been deposited on the Objective Hill in times past. Although there was some disagreement among the ants as to whether the Index gave the proper measurement, it was generally agreed by all that increasing the height of the Objective Hill was what was generally called, after the loose fashion of these ants, a Good Thing.

Not only were these ants adding to the height of the Hill, but each day, after they had measured its height, each one took from it various selected objects. What was taken was transported to nearby places where each ant constructed what was called his own Subjective Hill of Satisfaction. Each of these individual Hills of Satisfaction had the peculiar property that it was not visible to any ant but the one who built it. It was generally agreed that

increasing the height of the Subjective Range, formed of individual Hills of Satisfaction, was a Good Thing.

One day a group of ants who had been concerned with the Index appointed themselves to consider what was going on in the nation. They called themselves the Ants Economici. They noted that there were important ways to increase the height of the Objective Hill. Some of these ways were written down for all to see. Some of the group concentrated on observing how the things individual ants brought to the Objective Hill correlated with what they took away. Others concentrated on the observation of the process of Picking and Choosing by individual ants in the Taking Away. There was some speculation that this observable process of Picking and Choosing had something to do with the height of the invisible Subjective Hills. There was also the hunch expressed that the Picking and Choosing had something to do with the composition as well as the height of the Objective Hill. If things were placed on the Objective Hill which none of the ants wanted to take away it was thought that the height of the Subjective Range would not be as great as it might otherwise be.

It was observed by these Ants Economici that the behavior of the other ants was automatically regulated in a truly marvelous way so that the height of the Objective Hill was growing each day, so that each ant took away in proportion to what he brought to the Hill, and so that the Objective Hill was composed of things that individual ants would Pick and Choose and then take away to build their Subjective Hills.

For a time contentment reigned. Then one of the Ants Economici offered this thought. "You know," he said, "the really important thing is the height of these Subjective Hills. I have deduced from watching the Picking and Choosing process and from the way I build my own Subjective Hill (I notice that as I receive additional Takings I am not able to add proportionally to the height of my Subjective Hill) and from the further belief that each of us ants is about the same in ability to build a Subjective Hill that the way to elevate the Subjective Range is to give each ant the same power to Pick and Choose. I conclude that reducing the Takings of those ants with the most and increasing the Takings of those with the least will result in the average Subjective Hill being higher. This is true only if the equalizing does not change the height of the Objective Hill."

So it came to be generally held that, since to elevate the height of the Subjective Range is a Good Thing, and since equalization of Takings was a way to elevate the Subjective Range so long as it didn't diminish the Objective Hill, equalization of Takings was a Good Thing.

But another Economicus, known as Positivus, spoke up. "We have done an Awful Thing. We have allowed a Non-Verifiable Statement to enter this discussion unannounced. You will remember that these Subjective Hills are such that we can't see the Hills other than our own. I have no way of knowing whether the Subjective Hill I am building is higher than yours. That means we have no way of telling or

verifying whether equalization of Takings will actually increase the height of the Subjective Range. Each of us may have his own opinion, but it will not be based upon a Scientific Measurement. Consequently, although we might be agreed that the height of the Subjective Range is really the important thing, we can't truthfully say that the way to elevate that Range is to change the distribution of the Objective Hill's goods."

The group was shamed into silence. After a while, someone said, "Well, then, can we, without doing the Awful Thing, say this? One way to elevate the Subjective Range is to look for ways to increase the height of the Objective Hill. If we can find ways that will do that without lowering the Takings of any individual ant, but at the same time increasing the Takings of some individuals, then it must surely be true that we will have elevated the Subjective Range."

"Indeed," another replied, "we can not only say that but we can say that, if the Takings of one rose and that of another fell, then the Subjective Range is elevated if the Takings of the one rose enough so that he could, even if he did not choose to do so, give enough out of his increased Takings to the other to more than enable him to maintain his Takings."

But Positivus rose to add to the clamor, which by this time had grown to fearful proportions. "Now look here, that's all a lot of nonsense. We can't really see these Subjective Hills at all. We are talking about something beyond observation and, hence, beyond Scientific Measurement. Therefore, the

best thing to do is just to stop talking about them. It is all right to notice that the process of Picking and Choosing goes on. We can observe this Revealing of Preferences, and test the consistency of such objective behavior, but we can't go behind it into the area of Subjective Hill-building without getting messed up in a Value Judgment. Indeed, we can't even say whether a higher Objective Hill has anything to do with the height of the Subjective Range. Hence, we can't say that anything will or will not change the height of the Subjective Range."

"But," asked a small voice from the corner, "aren't you making a Value Judgment when you say that ants should be allowed to Pick and Choose? Doesn't that imply something about the Subjective Hill-building?" Positivus responded, "Of course, when we say that freedom to Pick and Choose is a Good Thing we are making a Value Judgment. But it is a clearly announced Value Judgment and makes no statement about the height of the Subjective Range."

Another stalwart member of the group rose to say his piece. "I still wish there were some way that we could say which distribution of Takings would maximize the height of the Subjective Range. If only some Super-Ant who could see all the Subjective Hills would tell us which distribution would do it! Or, how's this? Why not let the ants Pick and Choose among all the possible Takings-distributions? A vote, that's the thing. That is something subject to Scientific Measurement!"

The small voice from the corner was heard again. "But we would, in effect,

be making Value Judgments in deciding to have a vote, in weighting the votes of the various ants, and in suggesting that the vote had anything to do with the Subjective Range. Moreover, if we ask the voters to rank their choices among several alternatives, for example, more equal distribution with a smaller Objective Hill or less equal distribution with a larger Objective Hill, we then run into inconclusive results which require arbitrary judgment for interpretation. Moreover, unless we are careful, they may vote for two things which you can't have at the same time."

The meeting was in chaos. Was there no way to bring Scientific Measurement to bear on the issue of elevating the Subjective Range?

II.

Here let us pause to review the situation. The controversy before the meeting of these curious ants concerns being objective about satisfactions, which are thought of as being of a purely subjective nature. If our fable is to have a happy ending, our fabulous group must "objectify" the subjective by adopting an independently observable indicator for the intensive magnitude of satisfaction. Since you are by now in the mood for this sort of thing, let us put an explanation of this "way out" in the mouths of our actors in the fable.

In our next view of the Ants *Economici* one of them is saying, "It is true that we can't see the Subjective Hills of others. However, we can see observable differences in the behavior

of individual ants. We can say, without making a Value Judgment, that one ant is apparently happier than another. Following this line, we can observe how the individual's share of Takings correlates with what we might define as the observable manifestations of the Subjective Hills."

Another *Economicus* picked up this thought. "The thing to do, then, is to inquire on this basis into the relationship between the level of Takings and Subjective Hill-building. By observation and experiment we can establish, without making Value Judgments, the effect of Takings equalization upon the elevation of the Subjective Range."

Positivus spoke again: "You must be careful. Be sure to note that you have established the relationship simply by definition. The proper way to state what is done is as follows: If we agree that the absolute height of an individual's Subjective Hill is indicated by some observable aspect of his behavior, then we may make verifiable statements concerning the relationship between Takings-Equalization and the height of the Subjective Range. This statement is on all fours with the way we measure the height of the Objective Hill. We, as Ants *Economici*, will provide an Index for the Subjective Range, even as we do for the Objective Hill, and we will leave it to others to decide whether a high reading on these indexes is a Good Thing."

The previous speaker replied, "But there are so many possible observable indicators. How are we ever going to agree on the ones to put in this Index you are talking about?"

Positivus rose once more. "Don't be discouraged. We have answered questions like this before. Let's try this question. The way to start is to use many indicators and see what results each gives. Then we will hold a meeting to decide which indicators to use and how to weight them."

The troublesome speaker sounded tired now. "Just one more question before we follow your suggestion. While I agree that we have made the elevation of the Subjective Range subject to Scientific Measurement, I note that it is only by agreement on definitions that we have done so. Is it, therefore, *really* any different from agreeing on assumptions concerning the Subjective Hill-building process and then drawing con-

clusions from that? In either case we rely on agreement."

Positivus leaned patiently on the pole which bore the Science-Can-Save-Us flag. "The difference is that with the agreement on the assumptions method no experiment is possible. Hence you would be relying on 'logical truth.' With agreement on the indicators method it is possible to bring a lot of experimental evidence to bear on the question." When he came to the words "experimental evidence," Positivus raised the flag from its stand and began marching. All the others joined ranks and followed him from the room.

The difficult problem of how to elevate the Subjective Range would soon be solved. Scientific Measurement had been brought to bear upon it!

Problems of Allocating Highway Funds

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TRAFFIC ENGINEERS are in agreement that the highway plant of the United States is inadequate to perform the task expected of it. Technological, economic, and social changes have made more and better highways a necessity, and such changes have altered and will continue to alter regional and local requirements for transportation service by highway.

The problem awaiting solution is one of highway finance. This problem has its origin in our reluctance or inability to modernize our methods and means of highway finance. One segment of this problem — the segment examined in the following pages — is that of the "dispersion" of highway-user revenues. Dispersion refers to the spending of highway funds without justification by need or without proper control. Largely, it consists of their allocation to local jurisdictions, usually in accordance with outmoded laws and formulas, where a sizable portion of the funds may be employed on projects of minor importance. This practice is nation-wide and gives rise to inequities and inefficiencies in the use of highway revenues.

Forms and Extent of Dispersion

The most common form of dispersion results from shifting the cost of local roads and streets to highway users. This may be accomplished by (1) the state's assuming local road indebtedness, (2) adding local roads to the state

system, (3) substituting shared state highway revenues for locally-raised funds, (4) using highway-user funds for projects not justified by traffic needs or which do not fit into an orderly and sound improvement program, and (5) constructing roads to standards not warranted by existing or predicted traffic.¹

In the majority of states, highway-user revenues accrue to a general highway fund from which legislative allotments are made for various highway purposes, and in nearly all states the laws provide that these revenues be shared with counties and cities. Sharing is done by formulas dating back to the early days of road building, and has been based largely on political pressures and guesses. The formulas give no weight to traffic volume. Hence, a small mileage is constructed in each county, and no considerable mileage in any one place. In Colorado, for example, a part of the revenue from the gasoline tax is allocated among 63 counties in proportion to the mileage of state highway in the county. In some counties a large portion of the mileage is Federal-

¹ In 1949, 19 percent of the rural road mileage and 10.3 percent of the urban mileage of the nation were included in the state highway systems. The extremes for rural mileage in state systems were North Dakota with 5.8 percent of the total mileage of the state and Delaware, with 100 percent. For urban mileage under state control South Carolina stood highest, with 49.3 percent.

Table 1. Distribution of Highway-User Revenues in Colorado, 1950

Type of tax	To State Highway Department	To counties	To cities
4-cent gasoline tax	70%	27%	3%
2-cent gasoline tax ^a	50	44	6
Motor vehicle license fee.....	50	50	..
Motor carrier tax..	52.5	47.5	..

^a A temporary tax enacted in 1947 and expiring in 1953.

Source: *Digest and Review of the Preliminary Report of the Colorado Planning Committee*, December, 1950, pp. 41-45.

aid highway, in others little or none is. The amount of funds allocated may bear little relation to the responsibility for maintaining state roads. The state highway department maintains Federal-aid primary roads, but the counties maintain Federal-aid secondary and other state roads. Table 1 indicates the method of allocating highway-user revenues in Colorado in 1950.

The counties' share of the revenue from the temporary 2-cent gasoline tax was distributed as follows: Half of the fund was apportioned according to the proportion of state highway mileage in a county and the other half according to the proportion of rural population of the state living in a county.

The amount of the 4-cent gasoline tax allotted to a county depends on that county's proportion of the state highway mileage. As was the case with the 2-cent tax, the amount given to cities is first apportioned to the counties on the basis of the number of motor vehicles registered in the county. The county then apportions funds to the cities on the basis of the proportion of

registered motor vehicles of the county found in the city. The motor vehicle license fees are collected by the county, which receives half of the amount collected. Motor carrier taxes are ton-mile and passenger-mile charges against common, commercial, and private carriers. A different law with different percentages exists for each of the three types of carrier. The percentages given in Table 1 are an average of the percentages under each law. The amounts going to the counties are apportioned in the same manner as are revenues from the 4-cent gasoline tax.

The unscientific and antiquated formulas by which the different states distribute highway-user revenues have political origins. New roads can be justified only when they meet an actual need or are capable of creating new traffic. But membership in state legislatures seldom parallels the geographical pattern of highway needs, and because of political pressures, funds are often channeled to low-traffic routes at the expense of heavy-traffic arterial highways. Often it has been necessary to permit the various interests involved to share in the distribution in order to receive support for a general system of user charges.² The result has been that highway-user funds have supported larger and larger mileages of local roads which are of little direct interest to the majority of highway vehicle owners. Consequently, there has been an increasing disparity between the standards of design of the primary

² W. B. Getchell, Jr., "Toll Revenues and Highway Finance," *Proceedings of the Third Highway Transportation Congress*, Washington, D.C., Apr. 25-27, 1950, p. 51.

Table 2. Disposition of Receipts from State Imposts on Highway Users
(Thousands of dollars)

Year	Net total funds distributed	For state highway purposes	For work on county and local roads ^a	For work on city streets ^b	For service of obligations for local roads
1925.....	393,738	300,628	80,246	3,988	1,697
1930.....	829,822	627,855	164,804	12,462	4,541
1935.....	908,676	523,399	207,716	22,708	7,710
1940.....	1,274,389	754,479	263,900	51,321	8,110
1945.....	1,186,220	770,705	264,437	47,360	3,884
1946.....	1,544,298	1,037,058	346,883	62,115	3,664
1947.....	1,764,567	1,110,272	383,754	93,174	6,849
1948.....	1,997,085	1,236,848	437,287	117,670	15,910
1949.....	2,241,512	1,449,285	472,415	131,344	22,357
1950.....	2,487,094	1,597,704	497,499	154,280	20,573

^a For Delaware, North Carolina, Virginia, and West Virginia the amounts for county roads under state control are included in allotments for state highway purposes for the years since these states took over such roads.

^b Funds for urban extensions of state highway systems are not included. Such funds are included in allotments for state highway purposes.

Source: *Highway Statistics*, Table DF.

highways and the traffic demands made on them. Highway users are being charged an ever-increasing portion of all highway costs. In 1921, the highway user contributed, in the form of state highway use taxes, 11.7 percent of the revenue for highway and street purposes. In 1941, the highway user contributed 51.2 percent of all revenues for highway purposes, and in 1948 61.8 percent.³

Table 2 indicates, for the United States as a whole, the different purposes for which highway-user revenues are being employed. Although allowance must be made for a rising price level, these data make it evident that categories other than state highways have been receiving an increasingly larger

proportion of the total funds distributed. The increases in the amounts for city streets and for servicing the obligations for local roads are marked. During the later years the total amounts for county and local roads are obscured by the fact that in Delaware, North Carolina, Virginia, and West Virginia the amounts spent for such purposes are included with the expenditures for state highways. As explained in the next section, however, the use of state highway funds for local roads and streets has not resulted in an increase in the total amounts spent for such purposes.

State Revenues Replace Local Revenues

The allotment of highway-user revenues to local uses has not resulted in a rapid improvement of local roads and streets because there has been a corresponding reduction in revenues from

³ Report of the Committee on Highway Planning, Finance and Administration to the Third Highway Transportation Congress. In *Proceedings of the Third Highway Transportation Congress, op. cit.*, p. 69.

Table 3. Sources of Highway Funds in the States
(Thousands of dollars)

Year	Highway-user revenues ^a	Federal aid (regular)	General taxes and appropriations	Other ^b	Total ^c
1921.....	103,592	77,457	69,721	40,400	291,170
1925.....	289,173	92,180	54,880	86,790	523,023
1930.....	700,911	92,463	43,318	77,963	914,385
1935.....	589,816	215,239	7,843	33,229	846,127
1940.....	761,569	160,576	4,726	28,912	955,783
1945.....	787,947	51,525	42,782	21,172	903,426
1946.....	1,059,413	137,829	96,240	30,509	1,323,812
1947.....	1,143,058	258,547	17,607	36,628	1,455,840
1948.....	1,274,061	322,412	32,247	46,503	1,675,223
1949.....	1,490,716	371,817	46,584	59,843	1,968,960
1950.....	1,669,780	371,033	20,841	72,800	2,134,454

^a Includes only amount used for state administered highways.

^b Earnings of bond sinking funds, Federal funds other than regular Federal aid, transfers from local governments, and miscellaneous income.

^c Does not include income from issue of bonds or notes.

Source: *Highway Statistics*, Table SF-3. Data also given in *Automobile Facts and Figures*, 1951, p. 59.

local taxes and other sources of support for local roads and streets. The increase in allocations by the state to counties and other local road subdivisions has often replaced local funds instead of supplementing them (see Table 3).

Local contributions for highways declined in the depression of the thirties, and there has been a reluctance to restore them to former levels or to draw on local general revenues for the purpose. Local governments have been called upon to support new services and the increased activity of other services, such as better schools, and inasmuch as counties and municipalities are influential in state legislatures, it has been possible to shift some of the local highway burden to the state highway fund. The American Association of State Highway Officials has proposed that

where support for local roads cannot be obtained from local sources, the general state revenues be used for the purpose, believing that such a policy is preferable to allocating to local purposes road-user tax revenues needed for primary highways. Illinois, Missouri, Ohio, Texas, Washington, and West Virginia now make appropriations from the general fund for local roads.⁴

The consensus is that the need for highway improvement is more urgent on the more heavily traveled routes because that is where the economic benefits relative to costs are greatest. An eminent highway economist has stated that when traffic volumes are expressed

⁴ Committee on Highway Finance, *Preliminary Report of Special Subcommittee for Study of Highway Finance Problems*, 1949, pp. 5, 26.

in terms of highway-user revenues the high-cost roads with heavy traffic generate more than enough revenue to pay for themselves but that the low-cost land-service roads with light traffic fall far short of generating sufficient revenue to meet their costs.⁵

The heavily traveled routes return comparatively large revenues per mile and the lighter traveled roads a small return per mile. Studies covering a 10-year period in Connecticut show that the most expensive roads to construct relative to use are the least-traveled rather than the most-traveled ones.⁶

In Iowa a recent study found the cost per vehicle-mile for the construction and maintenance of the different classes of roads to be as follows: primary roads, 0.9 cents; secondary roads, 2.8 cents; and local rural roads, 4.5 cents.⁷

An integrated, well-ordered primary road system, however, necessarily contains a considerable mileage of connecting links and feeder roads with light traffic volume which probably will never earn enough to repay their cost. They are similar to railroad branch lines which, though operating at a loss, are continued because of their value to the entire railroad company. The fact that most of the traffic, re-

gardless of origin, passes over only a small portion of the total highway mileage does not indicate a great waste of funds on large mileages of low-traffic roads. "... without the low-traffic roads to act as feeders the heavily traveled stretches of highway could not occur. What this relationship does indicate, however, is the opportunity for economy by maintaining feeder-roads under low-cost surfaces which are sufficient for the local volume of travel and using higher type surface for the construction of densely traveled stretches of primary system."⁸

Standards of Construction for Secondary and Local Roads

Convincing every group that it gains by having highway-user revenues spent for the most part on arterial rather than on secondary or local roads may not be an easy task. Consider, for example, a farmer who lives 10 miles from a town, half the distance being over a modern paved highway and half over a dirt road. This farmer probably burns more gasoline mile for mile in driving over the dirt road than in driving on the paved one. Making him believe that he gains more from having highway-user funds spent for a modern road in some other locality rather than on roads in his own neighborhood is difficult. Perhaps he does benefit more from having the money spent on primary roads. This is the belief of one prominent highway official who states: "Too many people think of our major State Highways as serving only the

⁵ G. P. St. Clair, "Nation-Wide Requirements of the Highway Program," National Tax Association, *Proceedings of the Forty-First National Conference*, 1948, p. 185.

⁶ Roy E. Jorgensen, *Proceedings of the Third Highway Transportation Congress*, op. cit., p. 47.

⁷ *Federal Aid Highway Act of 1950*, statement of F. R. White, Chief Engineer, Iowa State Highway Commission, p. 165.

⁸ *A Factual Report on Delaware Highways*, 1948, pp. 77-78.

convenience and pleasure of urban dwellers, or that of pleasure-bound interstate tourists. On the other hand, a great many seem to believe that the only highway of importance to the farmer is that which directly serves his farm. The fallacy of such attitudes becomes apparent with a little factual thinking."⁹

The Bureau of Public Roads also has found that facts do not support the contention that rural people do most of their driving on local roads, and hence receive no direct benefit from primary and secondary roads.

Again, take as an example an urban resident where city streets are maintained by local taxes. Surveys have shown that roughly half of all trips by motor vehicle are within the limits of municipalities. Although these trips are short and would not result in as large a number of vehicle-miles as a corresponding number of trips on rural roads, yet they are made where there must be much stopping and starting, so that the use of gasoline, mile for mile, is usually greater than for rural travel. Since urban residents pay taxes on gasoline used for these trips within municipalities, it may be difficult for them to understand why all highway-user funds should be spent on rural roads and none on city streets. Of course, there is Federal aid now for urban extensions of Federal-aid highways, and several states refund a portion of highway-user revenues to municipalities for providing certain street

improvements, but the amounts thus refunded are not proportional to the gasoline taxes collected from gasoline used in driving within municipalities.

A study made in 1942 shows that almost two-thirds of all state highway revenue was derived from urban communities of more than 2,500 people. Yet, at the time, only 10 percent of highway construction funds and 6 percent of the maintenance funds used in the states were for urban extensions of state highway systems.¹⁰

For several years the National Grange, a farm organization with a widespread membership, has favored the extension of Federal aid to the main feeder lines of the arterial highways. This organization held, however, that feeder, or secondary, roads need not be built to as high standards as the arterial routes, and that the traffic over them should be classified in order to extend the mileage as far as practicable within the limits of sound construction and the principle of permanency.

This problem is outlined clearly in the following statement from the address of the Master of the National Grange at the annual meeting in 1949.

"When heavy trucks leave the well-improved highways and travel on secondary highways which are not designed to carry such loads, they frequently do tremendous damage. Unless we are to build our secondary highways practically up to the specifications of our main highways, it seems inevitable that we must come to a

⁹ *Federal Aid Highway Act of 1950*, statement of B. D. Tallamy, Superintendent of the New York Department of Public Works, pp. 181-182.

¹⁰ Norman Hebden and Wilbur S. Smith, *State-City Relationships in Highway Affairs* (New Haven: Yale University Press, 1950), pp. 22-23.

system of classifying traffic and placing special load limits on our secondary roads. . . . Classification would result in some inconveniences for the rural areas, and probably higher rates for truck haulage, but we seem to be faced with an impossible alternative of greatly increased road expenditures to meet the growing tendency to haul heavier and heavier loads or limiting the loads."¹¹

One authority on highway problems believes that farmers are important in contributing to the heavy weights found on the highways and that for this reason the cost of secondary roads cannot be much less than that of main highways.¹²

It is probably not correct, however, to believe that arterial roads can be constructed to high standards and secondary roads to lower standards. The classification of traffic would be difficult and might even be impossible, owing to possible political influences. Much farm-to-market hauling of livestock, milk, and grain is done by heavy trucks, and many large oil trucks use secondary roads in making delivery of petroleum products to farmers and country villages. These groups could bring considerable pressure to bear if they wished to oppose a classification of traffic.

More recently, in 1949, the National Grange modified its policy somewhat

by adopting the principle that other rural roads in addition to arterial and secondary, or feeder, roads should receive the best of engineering and technological services from the state and local agencies and be built to relatively high standards of construction. With funds for improving arterial roads as limited as they are, the adoption of this policy by the states obviously would result in an almost insoluble problem of finance. Motorists are opposed to the dissipation of highway funds on projects which the majority of them will never use. Because of the necessity for levying highway-user taxes on a uniform basis regardless of the type of road on which the travel occurs, if the tax is high enough so that light-traffic roads generate enough revenue to pay for themselves the arterial roads will generate much more revenue than is required to pay their costs. This, according to St. Clair, is the basic reason for the opposition of motor vehicle users to supporting, even partially, the network of local, or land-service, roads.¹³ Because of the substantial sums of money required for providing large mileages of local roads of modern design, their construction cannot be justified on the basis of the contribution of such roads to the general welfare, nor are the owners of abutting land financially able to bear the burden.

Interests Benefiting from Improved Highways

Three major interests are served by the highway network: motor vehicle

¹¹ Quoted in "Highway Safety-Motor Truck Regulation," The Council of State Governments, A Report to the Governors Conference, Chicago, 1950, p. 94.

¹² *Federal Aid Highway Act of 1950*, statement of Wm. A. Stinchcomb, Chairman, Highway Committee, American Automobile Association, pp. 320-321.

¹³ *Loc. cit.*, p. 185.

operators, abutting-land owners, and the public or general welfare. "One of the most pressing needs of highway finance is to adjust tax schedules so as to bring the major interests served and the major revenue sources into balance."¹⁴

Agreement is general that highways should be supported largely upon a benefit basis. This view accounts for assessing most of the cost of providing highways against those who use them and against owners of abutting land. It is believed that these two interests are more private than public in nature.

Originally, rural roads served the farmers chiefly, making it possible for them to market their products, but at the same time making it possible for people in cities, towns, and villages to obtain supplies of foodstuffs and other products. People not living on farms in those horse-and-buggy days also used local roads for short pleasure trips and business trips into the country, but when they wished to travel any distance, they went by rail. The farmers were the principal users and were also the abutting-land owners, receiving most of the benefits and, hence, paying the larger share of the cost. This is still true of many local roads today. But in addition to these benefits, the roads served in getting children to school, in delivering mail, and otherwise in the general progress of the community and nation.

¹⁴ C. A. Steele, Highway Economist, Public Roads Administration, "Information Needed for the Fiscal and Allied Phases of Long-Range Highway Program Planning," in *Highway Finance*, Bul. No. 12, Highway Research Board of the National Research Council, Washington, D. C., 1948, p. 40.

Then came the automotive vehicle, owned in both country and city, but with the majority in the city. Residents of municipalities could not be satisfied with merely driving an automobile around on streets or for short distances into the country. Farmers were also enabled to take longer pleasure trips and to haul their products longer distances to market. Hence, a movement for improved roads arose and gradually grew. These improved roads served the same purposes as did the former unimproved ones, but in addition, by increasing the distance over which travel could take place, they made available opportunities not existing before, particularly for city people. Consequently, there was the feeling that the users should pay for the type of roads which the automobile made necessary.

Abutting-property owners, however, also receive benefits from improved roads. Access to land and its improvements is indispensable to personal, family, and business activity. Benefits to property owners are also reflected in increased property values resulting from the reduction or elimination of dust and mud and frequently from the change from agricultural or residential uses to business use. There is justification then for assessing a portion of the cost of improved roads against the property owner in the form of property taxes paid into the general tax fund.

The third interest, the public welfare, because it involves general community values which depend upon numerous direct and indirect benefits provided by highway transportation, is customarily supported upon an ability-to-pay basis. "This interest is repre-

sented not only by the use of roads in transacting public business, in national defense, in providing protection to persons and property, and in furnishing employment during periods of depression, but also through the provision of an intermediate service between that provided to abutting property and that provided to the motor vehicle user who wishes to travel beyond 'neighborhood' bounds. . . . The service provided by three blocks of pavement between the block in which a certain shopper lives and that in which the store at which she trades is located is of this type."¹⁵

Obviously, the highway user receives the largest share of benefit from the primary or arterial highways, although property owners and the public are also benefited. The determination of the amount of benefits accruing to the latter two groups is more difficult than determining that for road users, and at best can only be estimated. Such benefits should be taken into account, however. On the other hand, although local roads provide access to the property and enable farm products to reach markets, thus benefiting both the property owner and the public, these roads have certain contingency values to all highway users in that they may desire to use such roads now and then. These roads then, provide a benefit in the nature of a by-product to the highway-user group.

The conclusion in a study of highway finance by the American Association of State Highway Officials is that the direct highway-user tax is approaching the maximum the traffic will

Table 4. Total State Tax Revenues and Motor Vehicle Tax Revenues

(Millions of dollars)

Year	Total state tax revenues ^a	Total revenue from gasoline taxes and motor vehicle registration fees	Percent motor vehicle revenues of total state tax revenues
1946....	4,980	1,348	27.1
1947....	5,721	1,627	28.4
1948....	6,732	1,853	27.5
1949....	7,376	2,026	27.5
1950....	7,912	2,300	29.1

^a Other than unemployment compensation.

Source: Bureau of the Census. Data given in *Automobile Facts and Figures*, 1951, p. 63.

bear in many states (see Table 4).¹⁶ This study emphasizes the need for a wider basis of distribution that will include road benefits accruing to beneficiaries other than road users, benefits which are real and tangible and which should bear their fair share of the cost. Such a policy, it is pointed out, would be resisted by local authorities who are being pressed for more and improved services of all kinds.¹⁷

Highway authorities are in agreement that in those cases of general importance when it is deemed necessary for the government to provide funds for the support of land-service roads and streets, the funds might properly be taken from the general revenues rather than from highway-user funds.¹⁸

The Highway Study Committee in Michigan believes that most of the re-

¹⁶ *Preliminary Report of Special Subcommittee for Study of Highway Finance Problems*, *op. cit.*, p. 83.

¹⁷ *Ibid.*

¹⁸ G. P. St. Clair, *loc. cit.*, p. 187.

¹⁵ *Ibid.*

sponsibility for financing local roads should rest on the local tax structure. The Committee believes further that not only has responsibility for such roads been transferred from the property tax to the motor vehicle tax but also that this relief from local financial responsibility has encouraged demands for much higher standards for local roads than were considered necessary when the locality itself supported them.¹⁹

The policy of assessing all or most of the cost of highways against users receives strong support from those who pay property and other taxes and who do not wish to see these revenues devoted to roads at the expense of other state and local functions and services.

On the other hand, those who pay motor vehicle imposts expect improved highways and oppose the use of their funds for other purposes. They feel, further, that because other interests benefit from improved highways, these other interests should help pay for them.

Abandonment of Unnecessary Roads

One way to make expenditures for highways more productive is to abandon unnecessary roads. Owing to the rectangular method of surveying land over part of the country, to the breaking up of the land area into small farms and to the particular location of farm buildings on many farms regardless of the method of surveying, much local road mileage represents a poor

use of financial resources and costs more to maintain than the resulting benefits are worth.

Reports from 32 states indicate a total of 148,000 miles of local roads as being nonessential. The four states of Kansas, New Mexico, North Dakota, and South Dakota contain over 65 percent of the mileage.²⁰

Studies in Iowa indicate that about 16,000 miles of local roads should be abandoned and the right-of-way turned back to agricultural production. "Some farms are so located that providing the cheapest possible road thereto would cost more than the entire value of the farm."²¹

The Bureau of Public Roads believes that as much as 400,000 miles of local roads should be abandoned as public ways so that they will not continue to be a drain upon highway revenues. According to the Bureau of Public Roads only 10 percent of the local rural roads carry more than 100 vehicles a day, and the average of all such mileage is 56 vehicles. The more important local roads that have been included in the Federal-aid secondary road system have an average of only 212 vehicles per 24 hours.²²

In a Mississippi survey, the point is made, however, that traffic volume is of minor importance in judging the priority of need for local roads. It is

²⁰ *Federal Aid Highway Act of 1950*, statement of L. W. Newcomer, County Engineer, Butler County, Kansas, p. 434.

²¹ *Ibid.*, statement of F. R. White, Chief Engineer, Iowa State Highway Commission, p. 162.

²² "Factors in Highway Progress," *Tax Economics Bulletin*, July-August, 1950, p. 41, published by the American Petroleum Industries Committee, New York City.

¹⁹ *Highway Needs in Michigan*, An Engineering Analysis by the Highway Study Committee, Michigan Good Roads Federation, 1948, pp. 142-143.

stated that economic and social factors must be given consideration. The small number of vehicles passing over a remote local road may carry mail, children to and from school, and agricultural products from farm to market.²³ In some instances, owing to unusual local and regional differences, possibly such an attitude can be defended. But as a general rule, it seems that it would be more economical to relocate groups of people living in sections where traffic volume is very low and shows little or no likelihood of growing. Furthermore, this alternative seems to hold the promise of providing better mail service, schools, and social conditions than would result from maintaining populations in areas that would return permanently only a low volume of traffic. The educational aspects of the problem are important, but highway users should not be expected to bear this burden.

Conclusions

The allocation of state highway-user revenues to local jurisdictions where the funds are spent on widely dispersed projects of minor importance is a nation-wide problem. Because of political pressures, antiquated laws and procedures continue to control the spending of highway funds within each state, and thereby money that is needed urgently for the improvement of arterial roads is drained away for projects that provide in return but little

service for the majority of motorists. The improvement of a substantial mileage of secondary roads is necessary if the arterial roads are to perform their function effectively. But to build feeder roads to as high standards of design as primary roads and to improve other local roads indiscriminately to high physical standards represents a wasteful use of highway revenues, and particularly so in view of the scarcity of such revenues and of the difficulties encountered in trying to increase them in amount. Traffic concentrates on the arterial routes, placing a heavy burden on them from the standpoint of both wear and capacity, and if the nation is to possess a well-developed system of highways the bulk of the expenditures should be made for improving these roads. When money is spent on less useful projects improvement in the efficiency of the highway plant is retarded and the cost of highway transportation is higher than it should or need be.

The remedy for these conditions lies in educating the public in highway economics. Then, repeal of outmoded formulas and their replacement by modern procedures for spending highway funds will be possible, as will the abandonment of unimportant roads which cost much more for maintenance than they return in service. If local roads are improved, the cost should not be charged to highway users. Reasonable expenditures for such roads may more properly be charged against benefiting land owners and against the general welfare.

²³ *Today and Tomorrow*, A Report to the Legislature of Mississippi by the Legislative Highway Planning Committee, 1949, p. 55.

Books Reviewed

Farm Policies of the United States, 1790-1950. By Murray R. Benedict (New York: Twentieth Century Fund, 1953, pp. 548. \$5.00)

This book does not deal with current policy issues but rather is a historical review of governmental developments that have influenced farmers' economic and social positions over the entire span of 160 years. It is to be followed by a more intensive study of the farm programs of the past 20 years together with a series of proposals for constructive action.

The volume should prove valuable for several purposes: *First*, the student of policies and programs is furnished evidence as to the long periods of gestation and development involved in getting ideas for change through the legislative process. An idea emerges, is agitated, discussed, and compromised, and eventually finds expression in law or drops by the wayside. *Second*, it shows how programs are largely products of their times. This underlines the need for a good background in the relevant conditions to understand why different programs emerged when they did. *Third*, the student will find it useful as a reference book to answer specific questions. Just how did the Brannan Plan differ from other proposals? (See pages 484 and 485.) Just what are the objectives of the Food and Agriculture Organization (FAO)? (See page 456.)

Benedict's story begins with the problems faced by the new government when the country was essentially rural

and traces developments in five policy areas: land policy, the money and banking system, tariff policy, transportation, and slavery as a factor differentiating North and South. These occupy the first 93 pages. A curious omission is that no reference is made to the land grant in connection with the construction of the Illinois Central Railroad.

He dates class consciousness on the part of farmers from about 1870. This was precipitated by the sharp decline in prices following the Civil War. He unfolds the long story of farm organizations beginning with the Grange in 1867. The importance of farmers' attitudes in connection with the regulation of railroads and other public utilities and antimonopoly legislation is developed. The farmers' interest in the monetary problem is detailed. In the period of rising prices commencing in the late 1890's, farmers' ideas changed and the legislation of the period took a general turn toward being more social than economic. With the coming of the Wilson administration the history of a series of acts relating to banking, rural credit, and so forth are detailed. Then came World War I with its brief period of high prices, land speculation, and increased debts.

The break in prices after 1920 set the stage for a period of active organization among farmers. The history of the idea of "equality for agriculture" is developed; and the extensive developments in connection with cooperatives and the long legislative struggle over the McNary-Haugen bills are consid-

ered. Benedict says that this struggle laid the foundation for the agricultural legislation of the 1930's.

The story of the vigorous, many-sided attack by the Roosevelt administration is told. The early agricultural program centered on reduction of supply. Interpretation of the results is confused by the drouth of the mid-thirties. The Supreme Court decision of January, 1936, forced a change in the law but the aim remained the same. The storage phase which had emerged in the beginning was regularized in 1938. The details of many other programs — rural credit, conservation, and electrification — are set out and attention is given to changes in tariff and other, more general policy areas that affected agriculture.

The war of 1939-45 brought higher demands and prices for farm products, the raising of the price support levels, and the problems of increased supply and expansion of output. The postwar period differs from that following previous wars by the absence of an immediate postwar depression. The story of the Agricultural Acts of 1948 and 1949 and the postponement of their application to "basic" commodities is told in detail.

This is a scholarly summary of the history of many programs in diverse fields which have been related to American agriculture and of farmers' reactions to and effects on them. For the most part Benedict reports the story. From time to time he makes shrewd and, in general, wise comment on what was done. One gathers that he looks with favor on the tendency toward

broadening the influence of the government but he notes some things which in his opinion were bad mistakes. A noticeable case is our tariff policy in the 1920's. This reviewer would point out that steady expansion of governmental influence in the economy creates more and more situations where serious mistakes can be made; moreover, he is not so confident as Professor Benedict that steady expansion of government influence will always be in the long-run interest of the economic and social well-being of our economy. For example, history indicates that constructive changes in land tenure are essentially a matter of gradual adjustments in traditional customs and adaptation to changes in economic and cultural environment, whereas Benedict comments favorably on the views of those who want legislative action in this field.

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Capitalism and the Historians. By F. A. Hayek, ed. (Chicago: University of Chicago Press, 1954, pp. vii, 188. \$3.00)

"The chief thing that we learn from history is that we do not learn from history," said a French cynic. Yet we unconsciously base many of our attitudes on the lessons of history. Some of these supposed lessons are historic myths, and history is full of myths. There is the log cabin myth, the safety valve myth, the impressment of sailors caused the War of 1812 myth, and so on. Historians are kept busy exploding them, and other historians are

as busy creating new ones, although not intentionally as a rule. Some of these myths matter only to scholars but some are the foundations on which we base highly important public policies. Honest men then defend those policies with courage and sincerity; they would not do so if they knew their hypotheses were false. It does not take the student of history long to realize that what happened is often less important than what people think happened.

One American, one French, one South African, one Austrian, and one English scholar have concluded that the belief that the Industrial Revolution at first made the condition of most workers worse is a myth. Moreover, it is a myth whose consequences are very important to us today. Upon that myth rest such attitudes as hostility to capitalism, distrust of businessmen by intellectuals, concealed or unconscious admiration for Karl Marx, and a tendency to entrust government with more and more regulation of business.

This hostility to capitalism has persisted despite the fact that the nineteenth century brought more material progress to the average man than he had known for centuries. And it was the manufacturer and the merchant who produced and distributed the goods which made this progress possible. Yet these businessmen are not hailed as benefactors but all too often are criticized as greedy, callous exploiters of laborers and consumers. Why are businessmen castigated just when they have made important material contributions to mankind? According to the authors of these essays, there are three basic explanations. There was poor

reasoning on the part of early historians who had no training in economics; there was uncritical acceptance of propaganda as valid evidence; and there is bias against business on the part of many intellectuals who interpret history for us.

T. S. Ashton especially has cited in this book examples of poor economic reasoning. What caused the population to increase in the eighteenth century? He points out that medical and material progress enabled some people in the eighteenth century to live who formerly would have died. That they lived was an advance although the low standard of living of many persons might not suggest it was. He reinterprets the foreign trade and cost of living figures of the early nineteenth century and shows that economic conditions were better than had been supposed (pp. 136-41, 153-56). He also points out that property taxes, like the window tax during and after the Napoleonic wars, tended to give people poorer housing, more crowded living conditions, and higher rents. It was taxation, not factories, that caused this, however. He also says the worst working and living conditions in any industry were found not in the factory stage but in the outmoded domestic stage. Less able employers were able to compete with the more efficient factories only by making people work long hours in cheap and often dangerous surroundings. Much the same situation exists today in the coal mines where the accident rate is worse in the small mines with outmoded equipment. Yet one bad accident in a big mine, like that at Centralia a few years ago, can

do the big mines' reputation great harm. Some of the worst working conditions have been in the sweatshops rather than in the factories. Because these bad conditions were noticed with the coming of the factory, indeed caused to some degree by the greater efficiency of the factory, the factory got the blame, and the blame was transferred to capitalism.

The second count against historians of the early part of the Industrial Revolution is that they did not weigh their evidence carefully. Professors Hutt and Hayek both point out that such classics as J. L. and Barbara Hammond's *Town Labourer* and Hutchins and Harrison's *A History of Factory Legislation* rely heavily on evidence presented before the so-called Sadler's Committee in 1832. These hearings were highly propagandistic — Sadler was endeavoring to put through a Ten-Hour Act — and the witnesses were not testifying under oath. At a subsequent investigation of these hearings many witnesses refused to repeat their testimony under oath and other evidence was completely refuted (pp. 162-63). The Hammonds themselves admitted late in their lives that new evidence indicated that people were better off in the early nineteenth century (p. 12). Few persons know this. Louis Hacker says Americans rely unduly on G. Myers' biased *History of the Great American Fortunes* (p. 81).

Hayek also points out that not enough weight has been assigned to the fact that Tory writings provide much of the information on factory conditions. The sympathies of the agricultural-minded Tories were with the working classes. Some "knew" that conditions were un-

speakable in the Midlands but admitted that they had not bothered to confirm their beliefs (pp. 20, 177). This was a matter of political rivalry with the Whigs. De Jouvenel and Hutt say that as people improved their living standards, got better educated, and as some got the vote, they became increasingly critical of poor economic conditions and low moral standards (pp. 100, 174). Also for the first time they had hopes of economic betterment. Professor Hutt reminds us of the literary reputation of this period — "There never was an age more fond of sickly sentiment" (p. 179).

Bertrand de Jouvenel's approach is broader but less precise than those of the other writers. He contends that the historians of the nineteenth century are among the modern intellectuals and that intellectuals in the last thousand years have tended to throw their influence against whatever class was in power. Also intellectuals have not always sided with the common man as they tend to do today. The medieval clergy urged the nobility to seek fewer worldly goods; the legal profession (the next intellectuals) helped batter down the power of the church and then joined with the merchants against the power of the military state. These intellectuals had little interest in the welfare of the common man. When mercantilism became dominant and the Industrial Revolution made businessmen increasingly powerful, the new intellectuals (now academic people) became critical of business. Yet they did so at a time when the accomplishments of business were helping the common man more than business had helped him

in any previous age. De Jouvenel asks whether "the intelligentsia must be at odds with any ruling group" (p. 117). (Apparently he has never heard a professor defined as "a person who thinks otherwise.") He explains that academic and business standards differ sharply. Business is carried on for profit and "the customer is always right," whereas the academician allegedly seeks truth and cares neither for profit nor the customer and will gladly sacrifice profits to perfection. De Jouvenel makes the triple suggestion that the academic man is frequently jealous of the businessman, he does not understand him, and despite his claim to impartiality, the academic man is not an unbiased judge and reporter.

Two questions arise about these essays. Are they a mere "white-washing" of businessmen and capitalism? The answer is clearly "no," for the authors have documented their findings too well and reasoned too closely for that to be the case. Moreover, they readily admit that in certain times, as during the Napoleonic wars, and in certain areas, there was economic retrogression. Admittedly, a loose reading and interpretation of these essays could cause the early nineteenth-century to be painted in more favorable colors than it deserves to be.

The second question is whether historians have explained adequately how the standard of living of the average man could improve as much as it has in the last 150 years, or even as much as it did from 1750 to 1850. The answer is again "no." They should have given more credit to merchants and manufac-

turers than they have. In history as in journalism, bad news seems to make more headlines than good news.

A more balanced approach to the history of modern capitalism is needed.

DONALD L. KEMMERER

The Age Structure of the Corporate System. By William L. Crum (Berkeley and Los Angeles: University of California Press, 1953, pp. xii, 181. \$3.50)

Statistics of Income for 1945 and Statistics of Income for 1946, publications of the United States Treasury Department which became available in 1950 and 1951, presented for the first time a classification of corporation income tax returns by date of incorporation. Using the data published in these two reports, Crum has developed a statistical analysis of the age structure of American corporations. The book presents for the first time information on the vital statistics of corporations which is not based on some sort of sample.

The age distribution of the entire corporate population is presented in terms of number of corporations and then in terms of total assets. Variations in age by size of corporation and by line of industry are discussed, as well as the relationship between age and profitability and corporate births and deaths. No information is available on the age distribution of business units, because we do not know how long some corporations existed under some other form of business organization.

The facts and conclusions presented

in Crum's book are not surprising. For example, it is not surprising to learn that from the standpoint of number of corporations, the system is dominated by young corporations, but from the standpoint of importance (measured by total assets) older firms predominate. Among lines of industry, manufacturing has an older age structure than trade, which is about what one would expect because of the relationship between size and age. In regard to age and profitability the very young corporations are much more likely to suffer losses than the older corporations, but liability to deficit does not always decline with age. In discussing profitability, Crum also shows that incorporations which are new businesses are much more subject to loss than incorporations of previously existing enterprises.

At various places in the book Crum examines briefly explanations of the statistical results, but he does not concern himself with an analysis of the economic implications of the data. Most of the book is given over to a description and explanation of the statistical techniques and methods of analysis used. This makes it difficult reading for persons not interested in the procedural aspects of the study but only in the conclusions, qualifications, and assumptions.

The major contribution of the book is that we are given facts in regard to corporate age structure and relationships between age and such factors as profitability and size, whereas before we had only conjectures. In supplying these facts Crum has substantially en-

hanced our knowledge of corporate activity and the dynamic nature of the American economy.

JAMES W. LEONARD

Effects of Taxation: Investments by Individuals. By J. Keith Butters, Lawrence E. Thompson, and Lynn L. Bollinger (Boston: Harvard University Graduate School of Business Administration, 1953, pp. xxxiv, 533. \$6.25)

One of the most urgent questions in the field of taxation today, and one of fundamental importance for policy, is that of the effects of high Federal income taxes upon business expansion and economic development. It has been widely argued that the present taxes are destroying incentives and drying up the sources of money capital for business expansion. However, critics of this point of view maintain that there is no concrete evidence of such effects. Recognition of the fact that an answer to the question requires further empirical analysis of the actual effects of the taxes led to the undertaking, under the auspices of the Harvard Business School and assisted by a Merrill Foundation grant, of a series of studies of the effects which the present taxes are having upon the economy.

The first six studies, published during the past five years, have dealt with the effects which Federal taxes have had upon the policies and actions of business firms and business executives. This volume, the last in the series, is concerned with the effects which the pres-

ent tax structure has upon the flow of equity capital to business firms from outside sources, or in other words, upon the ability and willingness of individuals to make equity investments. The approach is strictly an empirical one, the conclusions being derived largely from data gathered by the Survey Research Center of the University of Michigan with respect to investment decisions by individuals, and from the results of 746 interviews made in 1949 with active investors, primarily in the top income classes, selected on a random sample basis from lists of clients of investment banking firms.

The study is devoted primarily to three major questions: (1) Which groups of persons make the important decisions to invest in equity securities? (2) How does the present tax structure affect the investment capacity of these persons? (3) How does the tax structure affect the decisions of these persons to make equity investments?

The first question is easily answered: various studies show that the great bulk of funds available for equity investments comes from persons in the highest income groups. For example, in the period studied, an estimated 55 percent of all new investable funds were accumulated by the top 5 percent (from an income standpoint) of the spending units. Persons in the higher income groups demonstrate far more willingness to buy common stock than do persons with lower incomes, and a very high percentage of all corporation stock is concentrated in the hands of the relatively small fraction of the population in the highest income groups.

Study of the second question reveals that although the capacity of persons in the high income groups to invest is obviously reduced by the taxes, it is by no means destroyed; the sums which become available to these persons annually for the purchase of stock are very substantial. The various means of escaping payment of the highly progressive rates, particularly the low rates applied to capital gains, greatly lessen the effect which the over-all tax structure has on the capacity of persons to invest.

The third question, that of the effects of the taxes upon the willingness of persons to invest in various forms of equity securities, is a much more complex one. The study revealed a high diversity of investment goals, and the importance for reactions to taxes of the nature of the investment goals which various persons have in mind. For purposes of analysis it was possible to classify investors into two general classes on the basis of goals—those primarily interested in annual yield, and those primarily seeking appreciation in the sale value of the investments. The latter goal was shown to be dominant in the higher income levels. The interviews showed that on the whole the taxes caused persons with the annual-yield goal dominant to shift to still more conservative investments, since the tax reduced the net compensation for risk-taking on less-secure investments. A few yield-minded investors, however, shifted to more risky investments in an effort to maintain a given annual money income. On the other hand, the interviews showed that the present income tax structure causes the appreciation-minded invest-

ors to shift in the direction of more risky investments, primarily in order to take advantage of the low tax rates on capital gains. As a consequence, the market for securities of new enterprises showing capacity for substantial growth is increased.

Thus the general conclusion was reached by the authors that the tax structure, while lessening the capacity of persons to make equity investments, by no means destroys it, and while causing some net shifting of investment funds away from common stock to more conservative investments, at the same time increases the willingness of persons to invest in venturesome enterprises offering opportunities for substantial capital appreciation. The authors recognize the basic dilemma for tax policy which their conclusions raise; the feature of the tax structure which increases the willingness of persons to invest in new enterprises and lessens the over-all adverse economic effects of the tax structure, namely, the light tax burden placed on capital gains, is one commonly regarded as inequitable. No attempt is made to solve this problem or to offer specific policy recommendations. The point is stressed that the adverse economic effects of the taxes have been minimized in recent years by the generally high level of business activity;

in a period of recession the effects might be much more serious. While economic development has been rapid in recent years despite the tax, the authors feel that over a period of time the effects may become more significant.

The study is an important contribution to knowledge in the field, although, as is carefully pointed out, it in no sense provides conclusive answers to the major questions. The small size of the sample in itself limits the significance of the conclusions. Furthermore some question may be raised about the reliability of the answers given in the interviews. It is difficult to be certain that the answers given by persons about the effects of the taxes on their investment decisions always reflect the actual effects which the taxes have had in influencing the decisions. This is an inherent problem in empirical studies of this type, but it does not destroy completely the significance of the results. The study has been subjected to severe criticism by the exponents of the point of view that the taxes are having disastrous effects upon the economy. But these persons are able to offer even less evidence in support of their position than this study gives to the argument that the present taxes are not destroying economic development.

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